



V.O. Isom Elementary School

30 East Broadway Avenue, Greenwood, IN 46143
Phone: 317.889.4070

5th Grade Reading & Math Packet Summer 2013

Dear Parents and 4th Grade Student:

Congratulations on successfully completing fourth grade! In order to help you maintain all of the math & reading skills that you've learned this year, you need to complete the attached summer packet. Mastery of all these skills is extremely important in order to develop a solid foundation. The fifth grade program will add on to these fourth grade skills, so any time spent learning or reinforcing these concepts will be very beneficial for your child. If your child has difficulty in any area, parents may want to assign them additional practice.

To participate in the summer program, your child must:

- Read 100 minutes a week for 8 weeks
- Complete the math portion weekly
- Have parents sign and check all work
- Turn in the packet to their 5th grade teacher the first week of school.

Students who hand in a completed packet by August 9th, 2013 will receive a certificate from Mrs. Wooton as well as additional prizes!

Additional Prizes

Reading

- Wildcat coupon for every 100 minutes read.
- Enter in a drawing for a grand prize if 800 minutes of reading is completed.
- Top 10 readers (most minutes) will go on a walking field trip to Mrs. Curl in August!

Math

- Wildcat coupon for each week's worth of math completed.
- Enter in a drawing for a grand prize if entire packet is completed.

Reading- Incoming 5th graders are expected to read 100 minutes each week over the summer, with 1 week off for vacation. Students will need to keep a reading log of their time and have parents sign off. Since students will already be documenting their reading time, we highly encourage all students to participate in the Greenwood Public Library summer reading program. They have a wonderful variety of books that are leveled for 5th grade and students will be able to earn additional prizes and play games at the library. While there is no required reading list, we highly encourage students to read a variety of genres. At least 2 nonfiction books are suggested.

Week	Minutes	Parent Signature
#1		
#2		
#3		
#4		
#5		
#6		
#7		
#8		
	Grand Total =	

Math- There are 21 math pages in the packet: that's only 3 pages to do each week (1 side = 1 page). As you complete the pages each week, check them off on the chart below. There is also an answer key for parent use only in assisting their child. Remember, practicing multiplication facts (0-12) and division facts are VERY important!

Week	Date	Pages	Completed
#1	6/10 - 6/16	5-9	
#2	6/17 - 6/23	10-15	
#3	6/24 - 6/30	16-20	
#4	7/1 - 7/7	21-26	
#5	7/8 - 7/14	27-30	
#6	7/15 - 7/21	31-35	
#7	7/22 - 7/28	36-39	

* Dates may be adjusted to accommodate vacation.

There is a glossary of all math-related vocabulary at the end of the packet. In addition, you can go online to any of these websites for fun learning and reinforcement of math skills:

www.ixl.com

www.wildmath.com

www.harcourtschool.com

www.aplusmath.com

www.mathisfun.com

www.eduplace.com

www.aaamath.com

www.funbrain.com

www.mathstories.com

www.mathplaygroud.com

www.khanacademy.org

www.coolmathforkids.com

www.sumdog.com

Good luck with the packet. Remember to return it to your 5th grade teacher on the first week of school and you will be entered into a raffle for prizes!

Sincerely,

5th Grade Teachers

4th Grade Math Expectations

Number Sense

- Read and write whole numbers up to 1,000,000.
- Round whole numbers up to 10,000 to the nearest ten, hundred, and thousand.
- Order and compare whole numbers using symbols for “less than” ($<$), “equal to” ($=$), and “greater than” ($>$).
- Name and write mixed numbers as improper fractions.
- Write tenths and hundredths in decimal and fraction notations. Know the fraction and decimal equivalents for halves and fourths.
- Round two-place decimals to tenths or to the nearest whole number.

Computation

- Understand and use standard algorithms for addition and subtraction.
- Demonstrate mastery of the multiplication tables for numbers between 1 and 10.
- Use a standard algorithm to divide numbers up to 100 by numbers up to 10.
- Add and subtract simple fractions with different denominators.
- Add and subtract decimals (to hundredths.)

Algebra

- Plot and label whole numbers on a number line up to 100. Estimate positions on the number line.
- Show that multiplication and division are performed before addition and subtraction in expressions without parentheses.
- Understand and use the commutative and associative rules of multiplication.
- Use letters, boxes, or other symbols to represent any number in simple expressions, equations, or inequalities (i.e., demonstrate an understanding of and the use of the concept of a variable.)

Geometry

- Identify, describe, and draw rays, right angles, acute angles, obtuse angles and straight angles.
- Identify, describe and draw parallel and perpendicular lines.
- Identify, describe, and draw parallelograms, rhombuses, and trapezoids.
- Draw a shape that is congruent to another shape.

Measurement

- Measure length to the nearest quarter-inch, eighth-inch, and millimeter.
- Subtract units of length that may require renaming of feet to inches or meters to centimeters.
- Know and use formulas for finding the perimeters of rectangles and squares.
- Know and use formulas for finding the areas of rectangles and squares.
- Find areas of shapes by dividing them into basic shapes such as rectangles.
- Use volume and capacity as different ways of measuring the space inside a shape.
- Add time intervals involving hours and minutes.
- Determine the amount of change from a purchase.

Problem Solving

- Interpret data graphs to answer questions about a situation.
- Apply strategies and results from simpler problems to solve more complex problems.
- Know and use appropriate methods for estimating results of whole-number computations.
- Make precise calculations and check the validity of the results in the context of the problem.

* A parent guide is located with the answer key. These pages contain useful examples of problems and explanations.

Entering 5th Grade Summer Math Packet

First Name: _____ Last Name: _____

5th Grade Teacher: _____

I have checked the work completed: _____
Parent Signature

Select the one best answer for each question. DO NOT use a calculator in completing this packet.

1. Which of the following sets of numbers are all of the factors of 24?

- A. 1, 3, 8, 24
- B. 2, 4, 6, 8, 12, 24
- C. 2, 3, 4, 6, 8, 12
- D. 1, 2, 3, 4, 6, 8, 12, 24

2. Which of the following numbers is a multiple of 8?

- A. 18
- B. 28
- C. 44
- D. 56

3. The following are all multiples of a one-digit number: 12, 24, 30, 42.

- A. 5
- B. 6
- C. 7
- D. 8

4. Which number is a multiple of 3?

- A. 83
- B. 84
- C. 85
- D. 86

5. Which of the following set of numbers are all multiples of 7?

- A. 35, 47, 52
- B. 35, 36, 37
- C. 35, 42, 49
- D. 37, 47, 57

6. Al sees this sign at a copy center. What is the least number of copies Al can make without losing any money?

1. Copies cost 10¢ each.

2. Copy machines only take quarters.

3. Copy machines do NOT make change. If you make 1 copy, you will NOT get 1¢ back.

- A. 5
- B. 30
- C. 75
- D. 150

7. Which of the following is NOT true about prime numbers?

- A. They have exactly two factors
- B. One is a factor of every prime number
- C. No prime numbers end in zero
- D. All prime numbers are odd numbers

8. Which set does NOT contain any multiples of 4?

- A. {24, 36, 42, 54}
- B. {12, 15, 20, 24}
- C. {8, 16, 24, 34}
- D. {6, 10, 14, 18}

9. I am a factor of 36 and a multiple of 3. What number am I?

- A. 2
- B. 4
- C. 12
- D. 15

10. Since $4 \times 10 = 40$, and $40 \times 5 = 200$, then which of the following is true?

- A. $14 \times 45 = 200$
- B. $4 \times 10 \times 5 = 200$
- C. $4 \times 10 \times 40 = 200$
- D. $40 \times 10 \times 5 = 200$

11. My number is a multiple of 5. It is less than 100 and has a factor of 6. What is my number?

- A. 25
- B. 36
- C. 60
- D. 66

12. Write the products: Practice any you do not know quickly.

$$\begin{array}{r} 4 \\ \times 2 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 11 \\ \times 2 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ \times 5 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ \times 5 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 12 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 0 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ \times 5 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ \times 7 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ \times 5 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ \times 2 \\ \hline \end{array} \quad \begin{array}{r} 11 \\ \times 5 \\ \hline \end{array} \quad \begin{array}{r} 1 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 5 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ \times 2 \\ \hline \end{array} \quad \begin{array}{r} 11 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ \times 2 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \times 2 \\ \hline \end{array} \quad \begin{array}{r} 12 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ \times 5 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ \times 2 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 12 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 8 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ \times 6 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ \times 10 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ \times 7 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ \times 9 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ \times 7 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ \times 8 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 6 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ \times 9 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ \times 7 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ \times 9 \\ \hline \end{array} \quad \begin{array}{r} 11 \\ \times 7 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 6 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ \times 9 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ \times 7 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 11 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ \times 6 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ \times 8 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 9 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ \times 8 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \times 8 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ \times 6 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ \times 8 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 7 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 6 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ \times 12 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ \times 9 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ \times 6 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ \times 8 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ \times 6 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ \times 7 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ \times 8 \\ \hline \end{array} \quad \begin{array}{r} 0 \\ \times 9 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ \times 12 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ \times 8 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ \times 9 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ \times 6 \\ \hline \end{array}$$

13. Since $5 \times 20 = 100$, which number will complete the number sentence below to make it true?
 $5 \times \underline{\quad} \times 5 = 100$

- A. 4
- B. 5
- C. 20
- D. 25

14. Solve $136 - 67$.

- A. 61
- B. 69
- C. 71
- D. 79

15. Solve $206 - 48$.

- A. 158
- B. 242
- C. 162
- D. 262

16. Which expression is equal to 3×497 ?

- A. $3 \times (4 + 9)$
- B. $3 + (40 \times 9)$
- C. $3 \times (40 + 9)$
- D. $(3 \times 4) + (3 \times 9)$

17. Which has the same value as 57×4 ?

- A. $(50 \times 4) + (7 \times 4)$
- B. $(50 + 5) + 2$
- C. $(50 \times 5) + 2$
- D. $(50 \times 4) + 7$

18. Which expression is equal to 83×5 ?

- A. $80 \times (3 + 5)$
- B. $(80 \times 5) + (3 \times 5)$
- C. $(5 \times 80) + 3$
- D. $(80 \times 5) + ((80 \times 3))$

19. Solve the following:

$$\begin{array}{r} 2,749 \\ \times 68 \\ \hline \end{array}$$

$$\begin{array}{r} 837 \\ \times 46 \\ \hline \end{array}$$

$$\begin{array}{r} 368 \\ \times 20 \\ \hline \end{array}$$

20. What is 1486 divided by 3? Show your work.

- A. 4,812 r0
- B. 495 r1
- C. 280 r10
- D. 496 r0

21. What is 2520 divide by 10? Show your work.

- A. 25,200
- B. 2,520
- C. 253
- D. 252

22. What is the value of this expression? $420 \div 4$

- A. 15
- B. 100
- C. 105
- D. 150

23. There are 168 lunches to be shared equally among 3 fourth-grade classes. How many lunches will go to each class?

- A. 56
- B. 165
- C. 171
- D. 504

24. What is the value of this expression? $3750 \div 10$

- A. 370
- B. 375
- C. 3740
- D. 37500

25. Which division problem is correct? Show your work.

- A. $4,836 \div 6 = 86$
- B. $4,836 \div 6 = 806$
- C. $3,215 \div 5 = 641$
- D. $3,215 \div 5 = 603$

26. If $600 \div A = 300$, what is A?

- A. 200
- B. 30
- C. 20
- D. 2

27. Fill in the blank with the number that makes this math sentence correct:

$$12 \times \underline{\quad} = 60$$

- A. 7
- B. 4
- C. 6
- D. 5

28. What value of A makes the number sentence true?

$$100 \div A = 20$$

- A. 4
- B. 5
- C. 80
- D. 120

29. What value of n makes the equation below true?

$$n \div 7 = 21$$

- A. 3
- B. 28
- C. 141
- D. 147

30. Which value of g makes the number sentence true?

$$g \div 8 = 32$$

- A. 4
- B. 24
- C. 40
- D. 256

31. What value of p makes the equation below true?

$$270 \div p = 27$$

- A. 7
- B. 8
- C. 9
- D. 10

32. Which math problem can be checked using $3 \times 6 = 18$?

- A. $18 \times 3 =$ _____
- B. $18 \div 3 =$ _____
- C. $18 + 3 =$ _____
- D. $18 - 3 =$ _____

33. The students in your class collected pop cans to raise money for a class trip. The goal for each student was to collect 150 cans each. There are 27 students in your class. How many cans would that be altogether?

- A. 177 cans
- B. 405 cans
- C. 1350 cans
- D. 4050 cans

34. Suppose 33 photos are placed in a photo album. How many pages are needed if 3 photos fit on a page? Show your work.

- A. 9 pages
- B. 10 pages
- C. 11 pages
- D. 12 pages

35. Which answer means the same as \$12.49?

- A. One and two forty nines
- B. Twelve and forty nine
- C. Twelve and forty nine tens
- D. Twelve and forty nine hundredths

36. Mr. Clark was given some change at the grocery store. He was given 5 one dollar bills, 6 quarters, 2 dimes and a penny. How much change did he get?

- A. \$5.62
- B. \$6.71
- C. \$66.21
- D. \$6.21

37. What decimal part of one dollar is the sum of these coins?



- A. 2.00
- B. 0.20
- C. 0.02
- D. 0.22

38. What is another way to write 0.7 inches?

- A. $\frac{7}{10000}$ inches
- B. $\frac{7}{1000}$ inches
- C. $\frac{7}{100}$ inches
- D. $\frac{7}{10}$ inches

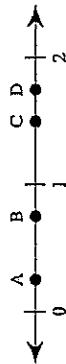
39. Which is equal to 0.45?

- A. $\frac{4}{5}$
- B. $\frac{45}{100}$
- C. $\frac{100}{45}$
- D. $\frac{5}{100}$

40. Which number is the same as one fourth?
(think of $\frac{1}{4}$ of 100 when converting to decimals; think of money)

- A. 0.4
- B. 0.04
- C. 0.25
- D. 0.75

41. Which point on the number line below best represents 1.75?



- A. Point A
- B. Point B
- C. Point C
- D. Point D

42. Match the following: Draw a line to make a match.

- Four tenths
- Eight hundredths
- 64 hundredths
- 3 tenths

- .08
- .3
- .4
- .64

43. Divide $3,252 \div 7$

- A. 463 R11
- B. 464
- C. 464 R4

44. Write the following in fraction and decimal form:

- Eight tenths = _____ = _____
- Twenty-seven hundredths = _____ = _____
- Five hundredths = _____ = _____
- Five tenths = _____ = _____

45. Write the following fractions in decimal form. Remember: $\frac{1}{10}$ is tenths hundredths

- $\frac{4}{10} =$ _____ $\frac{8}{10} =$ _____ $\frac{23}{100} =$ _____ $\frac{56}{100} =$ _____
- $\frac{8}{100} =$ _____ $\frac{5}{10} =$ _____ $\frac{66}{100} =$ _____ $\frac{2}{10} =$ _____

46. Which number is the same as .5?

- A. One half
- B. $\frac{5}{1}$
- C. Five hundredths
- D. $\frac{5}{1000}$

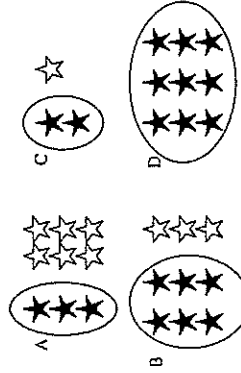
47. How is eighteen hundredths written in standard form?

- A. 0.018
- B. 0.18
- C. 18.00
- D. 1800

48. Solve each of these without using a calculator:

- $4 \times 6 =$ _____ $8 \times 8 =$ _____ $6 \times 6 =$ _____
- $2 \times 9 =$ _____ $5 \times 5 =$ _____ $9 \times 6 =$ _____
- $8 \times 5 =$ _____ $2 \times 2 =$ _____ $3 \times 4 =$ _____
- $32 \div 4 =$ _____ $7 \times 7 =$ _____ $56 \div 7 =$ _____
- $72 \div 9 =$ _____ $18 \div 2 =$ _____ $3 \times 8 =$ _____
- $45 \div 9 =$ _____ $4 \times 4 =$ _____ $8 \times 7 =$ _____
- $24 \div 3 =$ _____ $3 \times 3 =$ _____ $3 \times 8 =$ _____

49. Choose the circled group that represents $\frac{1}{3}$.



- A. A
- B. B
- C. C
- D. D

50. There are 4 red cars, 5 blue cars, and 2 green cars in the parking lot. What is the fraction of Blue cars in the parking lot?

- A. $\frac{5}{4}$
- B. $\frac{5}{9}$
- C. $\frac{5}{11}$
- D. $\frac{11}{5}$

51. What is the fraction for the shaded part of this set?



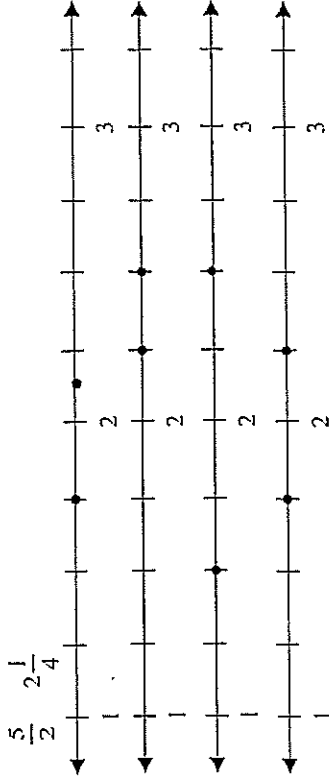
- A. $\frac{3}{8}$
- B. $\frac{3}{4}$
- C. $\frac{3}{7}$

52. Look at this set of objects. Which fraction stands for the part of the set that is shaded?



- A. $\frac{3}{5}$
- B. $\frac{5}{3}$
- C. $\frac{5}{8}$
- D. $\frac{3}{8}$

53. Which number line shows these two fractions?



54. Which of the following best represents the location of the X on the number line below?



- A. $\frac{1}{4}$
- B. $1\frac{1}{4}$
- C. $1\frac{3}{4}$
- D. $2\frac{1}{4}$

55. How many twelfths equal $\frac{5}{6}$?

- A. $\frac{10}{12}$
- B. $\frac{11}{12}$
- C. $\frac{6}{12}$
- D. $\frac{5}{12}$

56. How many eighths equal $\frac{1}{4}$?

- A. $\frac{1}{8}$
- B. $\frac{2}{8}$
- C. $\frac{4}{8}$
- D. $\frac{7}{8}$

57. Which number is an improper fraction?

- A. $\frac{11}{12}$
- B. $\frac{5}{8}$
- C. $\frac{8}{5}$
- D. $\frac{6}{7}$

58. Convert this improper fraction into a mixed number. $11/2$

- A. $11 \frac{1}{2}$
- B. $2/11$
- C. $4 \frac{1}{2}$
- D. $5 \frac{1}{2}$

59. Which of the following is listed from smallest to largest? Draw pictures

- A. $\frac{11}{4}, \frac{15}{6}, \frac{27}{12}$
- B. $\frac{15}{6}, \frac{8}{3}, \frac{27}{12}$
- C. $\frac{15}{6}, \frac{27}{12}, \frac{8}{3}$
- D. $\frac{8}{3}, \frac{27}{12}, \frac{11}{4}$

60. Solve the following:

$1 \times 9 = \underline{\quad}$	$3 \times 6 = \underline{\quad}$	$9 \times 7 = \underline{\quad}$	$6 \times 2 = \underline{\quad}$
$8 \times 6 = \underline{\quad}$	$2 \times 2 = \underline{\quad}$	$3 \times 8 = \underline{\quad}$	$9 \times 9 = \underline{\quad}$
$24 \div 3 = \underline{\quad}$	$7 \times 7 = \underline{\quad}$	$56 \div 7 = \underline{\quad}$	$4 \times 0 = \underline{\quad}$
$48 \div 6 = \underline{\quad}$	$18 \div 6 = \underline{\quad}$	$7 \times 3 = \underline{\quad}$	$7 \times 7 = \underline{\quad}$

61. Which of the following is a prime number?

- A. 21
- B. 33
- C. 49
- D. 53

62. Choose the equation that is NOT true.

- A. $\frac{1}{2} + \frac{3}{8} = \frac{7}{8}$
- B. $\frac{1}{6} + \frac{5}{12} = \frac{7}{12}$
- C. $\frac{3}{10} - \frac{23}{100} = \frac{7}{100}$
- D. $\frac{8}{10} - \frac{3}{5} = \frac{2}{5}$

63. The distance from home to school is $\frac{7}{8}$ of a mile for Amy and $\frac{4}{8}$ of a mile from Tom. How much farther does Amy walk than Tom?

- A. $\frac{11}{8}$
- B. $\frac{11}{16}$
- C. $\frac{3}{16}$
- D. $\frac{3}{8}$

64. Sonya needs $\frac{1}{4}$ teaspoon of salt for her recipe to make rolls. She needs $\frac{1}{4}$ teaspoon of salt for her recipe to make biscuits. How much salt will she need to make both recipes?

- A. $\frac{2}{6}$ tsp.
- B. $\frac{3}{4}$ tsp.
- C. $\frac{1}{8}$ tsp.
- D. $\frac{1}{6}$ tsp.

65. Solve for the unknown in this equation: $2/4 + n = 3/4$ $n =$ _____

- A. $\frac{5}{4}$
- B. $\frac{1}{2}$
- C. $\frac{1}{4}$
- D. $\frac{5}{8}$

66. How much is $1.35 \div 5$? Do not use a calculator!

- A. .27
- B. .35
- C. .5
- D. 1.7

67. How much is $1.14 \div 2$? Do not use a calculator. (Line up and move decimal straight up into answer)

- A. .7
- B. .52
- C. .57
- D. 1.7

68. Which of the following is closest to the sum of 811 and 356? No calculator!

- A. 1400
- B. 1300
- C. 1200
- D. 1100

69. Which of the following is closest to the product of 81 and 82? Do not use a calculator.

- A. 6400
- B. 7200
- C. 720
- D. 64,000

70. One hundred fourth graders at Beacon Tree Elementary are attending a field day. The teachers need to know how many hot dogs to buy. All the following are reasonable approximations EXCEPT.

- A. 100 hot dogs
- B. 150 hot dogs
- C. 200 hot dogs
- D. 50 hot dogs

71. A cat sleeps an average of 17 hours each day. About how many hours does a cat sleep in a month?

- A. 300 hours
- B. 600 hours
- C. 170 hours
- D. 6000 hours

72. Find the difference. Remember "bottom bigger better borrow" and you can only borrow from next door. You can always check your answers by adding your answer and the second number and this should equal your top number.

$$\begin{array}{r} 701 \\ -35 \\ \hline \end{array} \quad \begin{array}{r} 68 \\ -27 \\ \hline \end{array} \quad \begin{array}{r} 100 \\ -37 \\ \hline \end{array} \quad \begin{array}{r} 63 \\ -47 \\ \hline \end{array} \quad \begin{array}{r} 35 \\ -15 \\ \hline \end{array} \quad \begin{array}{r} 114 \\ -37 \\ \hline \end{array} \quad \begin{array}{r} 66 \\ -24 \\ \hline \end{array}$$

73. Find the product:

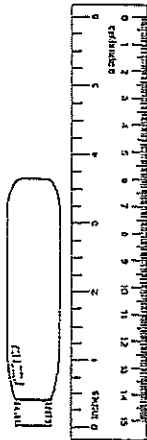
$$\begin{array}{r} 36 \\ \times 47 \\ \hline \end{array} \quad \begin{array}{r} 47 \\ \times 68 \\ \hline \end{array} \quad \begin{array}{r} 59 \\ \times 39 \\ \hline \end{array} \quad \begin{array}{r} 28 \\ \times 18 \\ \hline \end{array} \quad \begin{array}{r} 19 \\ \times 47 \\ \hline \end{array} \quad \begin{array}{r} 56 \\ \times 36 \\ \hline \end{array} \quad \begin{array}{r} 78 \\ \times 37 \\ \hline \end{array}$$

74. This pencil is about how many centimeters long?



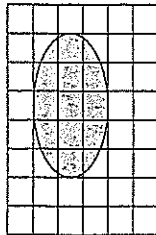
- A. 9 cm
- B. 10 cm
- C. 11 cm
- D. 12 cm

75. What is the length of this light bulb to the nearest inch?



- A. 2 in.
- B. 3 in.
- C. 4 in.
- D. 5 in.

76. What is the best estimate of the area, in square centimeters, of the SHADED FIGURE on the grid below? One square equals one square centimeter.



- A. 5 square centimeters
- B. 11 square centimeters
- C. 13 square centimeters
- D. 15 square centimeters

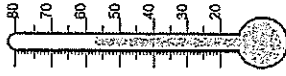
77. Which is most likely the length of a telephone book?

- A. 30 kilometers
- B. 30 centimeters
- C. 30 millimeters
- D. 30 meters

78. Brent is making a sail for a toy boat. The sail needs to be 3.55 cm wide. Which measure would be MOST useful in making the sail?

- A. To the nearest millimeter
- B. To the nearest decimeter
- C. To the nearest meter
- D. To the nearest kilometer

79. What temperature is shown on this thermometer, to the nearest degree?

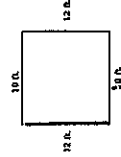


- A. 50 degrees C
- B. 55 degrees C
- C. 57 degrees C
- D. 60 degrees C

80. Bobbie was writing an article for the school newspaper about the amount of homework the 4th grade teachers were assigning. He was surprised to find out that the average student only spent 20 minutes per night doing homework. To make it sound longer, he decided to convert the time from minutes to seconds in the article. How many seconds did the average student spend on homework?

- A. 80 seconds
- B. 120 seconds
- C. 800 seconds
- D. 1,200 seconds

81. Sheryl planned to buy a wall paper border for her bedroom. She measured the lengths of the four walls and found the perimeter of her room. Use the picture below to determine the perimeter.



- A. 22 ft.
- B. 34 ft.
- C. 44 ft.
- D. 120 ft.

82. Sheryl may want to buy new carpeting for her room. She needs the square footage of the room to take to the store to price how much carpeting would be. What is the area of her room in the picture above?

- A. 22 square feet
- B. 120 square feet
- C. 100 square feet
- D. 144 square feet

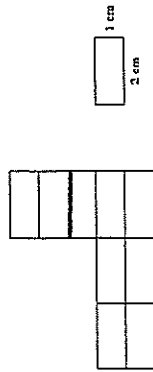
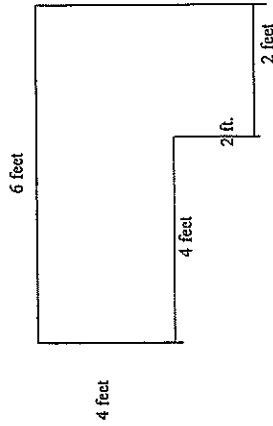


Figure A

- A. 18 sq. cm.
- B. 22 sq. cm.
- C. 32 sq. cm.
- D. 54 sq. cm.

83. Using the formula for finding the area, what is the area of the figure below?



- A. 18 feet
- B. 18 feet
- C. 24 feet
- D. 36 feet

85. What is the area of the figure above?

- A. 12 square feet
- B. 28 square feet
- C. 24 square feet
- D. 36 square feet

86. Sharon had a rectangular garden with a perimeter of 36 feet. The fence surrounding it was falling down on one of the short sides (width). If the length of the garden was 10 feet, how many feet of fence did she need to replace the broken portion (width) of the fence?



- A. 6 feet
- B. 8 feet
- C. 10 feet
- D. 26 feet

87. What is the area of the rectangle garden on the previous page (#86)?

- A. 6 square feet
- B. 18 square feet
- C. 80 square feet
- D. 100 square feet

88. If the perimeter of a square is 48 cm, what is the length of each side? (Draw a picture and think of the key word of what type of shape it is.)

- A. 8 cm
- B. 10 cm
- C. 12 cm
- D. 24 cm

89. What is the width of a rectangle that has a length of 6 feet and an area of 60 square feet? Draw a picture.

- A. 10 feet
- B. 12 feet
- C. 24 feet
- D. 66 feet

90. What is the width of a rectangle with a length of 5 inches and a perimeter of 16 inches?
Draw a picture.

- A. 2 inches
- B. 3 inches
- C. 8 inches
- D. 21 inches

91. Sarah opens her book. What is the angle formed by the open book?



- A. less than a right angle (acute)
- B. equal to a right angle
- C. greater than a right angle (obtuse)
- D. cannot tell without a picture of a right angle

92. Which of the following is closest to 8×0.92 ?

- A. 800
- B. 80
- C. 8

93. What is the size of this angle?



- A. acute
- B. equal to a right angle
- C. obtuse
- D. cannot tell without a picture of a right angle

94. Which angle is a right angle?

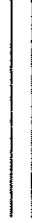


95. These lines are



- A. parallel
- B. perpendicular
- C. not intersecting

96. These lines are

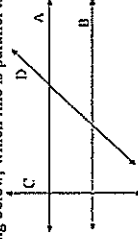


- A. parallel
- B. perpendicular
- C. intersecting

97. Find the difference. Remember bottom bigger better borrow.

$$\begin{array}{r} 307 \\ - 147 \\ \hline \end{array} \quad \begin{array}{r} 821 \\ - 424 \\ \hline \end{array} \quad \begin{array}{r} 600 \\ - 323 \\ \hline \end{array} \quad \begin{array}{r} 501 \\ - 247 \\ \hline \end{array} \quad \begin{array}{r} 427 \\ - 247 \\ \hline \end{array} \quad \begin{array}{r} 800 \\ - 248 \\ \hline \end{array}$$

98. In the drawing below, which line is parallel to line A?



- A. none of them
- B. B
- C. C
- D. D

In the drawing above, which line is perpendicular to A?

- A. none of them
- B. B
- C. C
- D. D

99. Which type of triangle has only 2 equal sides, like the drawing below?



- A. equilateral triangle
- B. isosceles triangle
- C. pyramid
- D. right triangle

100. Which geometric figure is shown here?



- A. equilateral triangle
- B. isosceles triangle
- C. pyramid
- D. right triangle

101. Answer the following questions on the figure below.



How many vertices does the box above have?

- A. 3 vertices
- B. 8 vertices
- C. 10 vertices
- D. 18 vertices

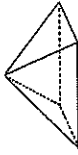
How many faces does the box above have?

- A. 6 faces
- B. 8 faces
- C. 10 faces
- D. 18 faces

How many edges does the box above have?

- A. 3 edges
- B. 9 edges
- C. 12 edges
- D. 18 edges

102. Answer the following questions using the figure below.



How many faces does this figure have?

- A. 2 faces
- B. 3 faces
- C. 4 faces
- D. 5 faces

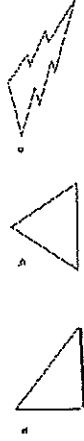
How many vertices does the figure in #102 have?

- A. 2 faces
- B. 3 faces
- C. 4 faces
- D. 5 faces

How many edges does the figure #102 have?

- A. 3 edges
- B. 4 edges
- C. 5 edges
- D. 8 edges

103. Which of these shapes can be folded in half so that both halves are the same (line symmetry)? Show this by drawing the line of symmetry on the figure, then choose the correct answer.



104. Which transformation has taken place to figure A to create figure B?

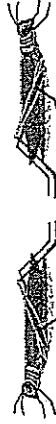


Figure B

- A. Tessellation
- B. Copy
- C. Flip
- D. Slide

105. Sharon had a bag of 12 marbles. She gave 8 of the marbles to Don. Which fractional part of the marbles did Sharon have left?

- A. $\frac{8}{12}$
- B. $\frac{4}{8}$
- C. $\frac{4}{12}$
- D. $\frac{1}{4}$

106. Laura wrote 200 words on the first page of her journal. After the second page, she had 400 words. If the pattern continues, how many pages will it take her to write 1000 words? Continue to fill in the table to find the answer.

Page Number	Words	Total words
1	200	200
2	200	400
3		
4		
5		
6		
7		

- A. 3
- B. 4
- C. 5
- D. 6

107. Answer the following questions using this set of data. { 2, 2, 3, 5, 10, 10, 10 }

What is the median?

- A. 5
- B. 6
- C. 7
- D. 8

What is the mode?

- A. 2
- B. 5
- C. 8
- D. 10

What is the range?

- A. 5
- B. 6
- C. 8
- D. 10

108. What is the length of a rectangle with a width of 4 centimeters and a perimeter of 28 centimeters?

- A. 7 centimeters
- B. 10 centimeters
- C. 20 centimeters
- D. 24 centimeters

109. Answer the following questions using this set of data.

8 11 18 11 20 9

What is the median?

- A. 8
- B. 9
- C. 11
- D. 20

What is the range?

- A. 8
- B. 12
- C. 18
- D. 20

What is the mode?

- A. 8
- B. 9
- C. 11
- D. 15

110. In which set is the median the same as the range?

- A. 3, 4, 6, 8, 3, 4
- B. 2, 4, 5, 6, 4
- C. 1, 5, 6, 10, 4
- D. 7, 8, 3, 6, 1

111. Divide $875 \div 5$. Show your work!

112. Multiply 46 by 78. Show your work!

113. How do you write 45 hundredths as a fraction and decimal?

_____ fraction

_____ decimal

114. The chart below shows the number of minutes that Katie spent on her computer each day for one week.

Katie's Computer Time

Day	Number of Minutes
Sunday	59
Monday	65
Tuesday	42
Wednesday	84
Thursday	64
Friday	37
Saturday	46

What number represents the median of the data in the chart?

- A. 47
- B. 53
- C. 59
- D. 37

What is the range of the data in the chart?

- A. 37
- B. 47
- C. 88
- D. 92

115. What is the median for this set of numbers?

2 8 4 4 15 7 14

- A. 4
- B. 7
- C. 8
- D. 13

116. Find the range of: 4, 12, 13, 6, 5, 8

- A. 4
- B. 8
- C. 9
- D. 13

117. Find the median of: 9, 4, 3, 7, 2, 8, 4

- A. 4
- B. 5
- C. 6
- D. 7

118. Find the sum or difference: Watch the signs.

$\begin{array}{r} 135 \\ +479 \\ \hline \end{array}$	$\begin{array}{r} 546 \\ +137 \\ \hline \end{array}$	$\begin{array}{r} 71 \\ -18 \\ \hline \end{array}$	$\begin{array}{r} 50 \\ -26 \\ \hline \end{array}$	$\begin{array}{r} 304 \\ +235 \\ \hline \end{array}$	$\begin{array}{r} 63 \\ -42 \\ \hline \end{array}$	$\begin{array}{r} 426 \\ -135 \\ \hline \end{array}$
--	--	--	--	--	--	--

$\begin{array}{r} 17 \\ +18 \\ \hline \end{array}$	$\begin{array}{r} 54 \\ -39 \\ \hline \end{array}$	$\begin{array}{r} 135 \\ -53 \\ \hline \end{array}$	$\begin{array}{r} 3.2 \\ +2.8 \\ \hline \end{array}$	$\begin{array}{r} 8.8 \\ +1.3 \\ \hline \end{array}$	$\begin{array}{r} 8.1 \\ -5.7 \\ \hline \end{array}$	$\begin{array}{r} 4.8 \\ -2.6 \\ \hline \end{array}$
--	--	---	--	--	--	--

$\begin{array}{r} 400 \\ -37 \\ \hline \end{array}$	$\begin{array}{r} 621 \\ -57 \\ \hline \end{array}$	$\begin{array}{r} 842 \\ -51 \\ \hline \end{array}$	$\begin{array}{r} 699 \\ +23 \\ \hline \end{array}$	$\begin{array}{r} 85 \\ +57 \\ \hline \end{array}$	$\begin{array}{r} 286 \\ -44 \\ \hline \end{array}$	$\begin{array}{r} 73 \\ +45 \\ \hline \end{array}$
---	---	---	---	--	---	--

119. What is the range of the data set below?

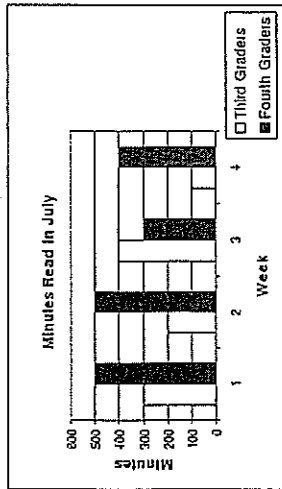
2, 1, 7, 3, 5, 2, 9, 7, 10, 4, 2, 10

- A. 2
- B. 8
- C. 9
- D. 10

120. Which shows the fractions in order from least to greatest?

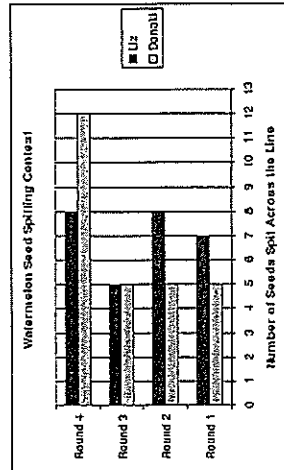
- A. $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$
- B. $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$
- C. $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{2}$

121. During July, the third and fourth graders kept track of the number of minutes they read each week. Use this graph to figure out how many minutes total the third graders read in July.



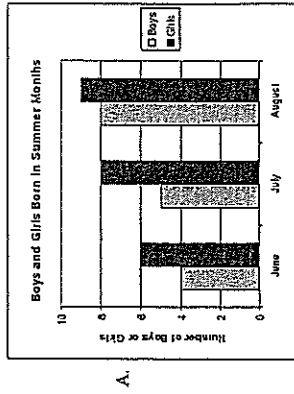
- A. 250
- B. 400
- C. 1000
- D. 2700

122. How many more total seeds did Liz spit across the line than Donald, in all 4 rounds?



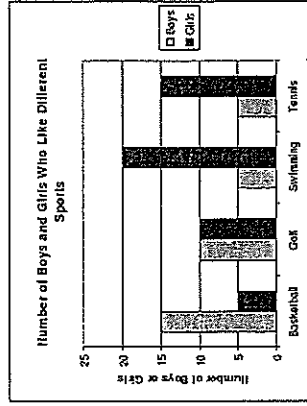
- A. 1
- B. 4
- C. 5
- D. 7

123. How many more girls were born in June through August than boys?



- A. 5
- B. 6
- C. 7
- D. They are the same

124. How many more boys like baseball than girls?



- A. 5
- B. 10
- C. 15
- D. 20

125. Do the following divisions. Then check your answer. Show your work. No calculators!

Check your work:

A. $1524 \div 6 = \underline{\hspace{2cm}}$

$$\begin{array}{r} \times 6 \\ \hline 1524 \end{array}$$

B. $380 \div 10 = \underline{\hspace{2cm}}$

$$\begin{array}{r} \times 10 \\ \hline 380 \end{array}$$

C. $4230 \div 10 = \underline{\hspace{2cm}}$

$$\times \underline{\hspace{2cm}}$$

D. $4 \overline{) 768}$

$$\times \underline{\hspace{2cm}}$$

E. $5 \overline{) 765}$

$$\times \underline{\hspace{2cm}}$$

126. Shade $\frac{3}{5}$ of the boxes below:



141. Find the quotients.

$$\begin{array}{l} 2 \overline{)2} \quad 3 \overline{)9} \quad 8 \overline{)32} \quad 7 \overline{)49} \quad 5 \overline{)10} \quad 4 \overline{)0} \quad 1 \overline{)1} \quad 4 \overline{)8} \quad 2 \overline{)12} \quad 9 \overline{)54} \quad 1 \overline{)3} \quad 1 \overline{)2} \quad 2 \overline{)4} \end{array}$$

$$\begin{array}{l} 8 \overline{)8} \quad 7 \overline{)63} \quad 8 \overline{)40} \quad 5 \overline{)0} \quad 4 \overline{)4} \quad 4 \overline{)12} \quad 9 \overline{)45} \quad 9 \overline{)63} \quad 6 \overline{)6} \quad 3 \overline{)12} \quad 1 \overline{)7} \quad 3 \overline{)0} \quad 1 \overline{)9} \end{array}$$

$$\begin{array}{l} 2 \overline{)16} \quad 3 \overline{)3} \quad 3 \overline{)15} \quad 5 \overline{)20} \quad 3 \overline{)18} \quad 3 \overline{)6} \quad 5 \overline{)15} \quad 7 \overline{)0} \quad 9 \overline{)27} \quad 4 \overline{)16} \quad 7 \overline{)21} \quad 4 \overline{)20} \quad 7 \overline{)28} \end{array}$$

$$\begin{array}{l} 8 \overline{)16} \quad 3 \overline{)21} \quad 9 \overline{)18} \quad 4 \overline{)24} \quad 2 \overline{)6} \quad 1 \overline{)8} \quad 5 \overline{)35} \quad 7 \overline{)35} \quad 3 \overline{)27} \quad 6 \overline{)36} \quad 3 \overline{)24} \quad 2 \overline{)0} \quad 4 \overline{)32} \end{array}$$

$$\begin{array}{l} 9 \overline{)9} \quad 4 \overline{)36} \quad 6 \overline{)42} \quad 5 \overline{)40} \quad 8 \overline{)64} \quad 7 \overline{)14} \quad 6 \overline{)30} \quad 8 \overline{)56} \quad 1 \overline{)5} \quad 4 \overline{)28} \quad 7 \overline{)56} \quad 8 \overline{)24} \quad 6 \overline{)24} \end{array}$$

$$81 \div 9 = \underline{\hspace{2cm}} \quad 48 \div 6 = \underline{\hspace{2cm}} \quad 18 \div 6 = \underline{\hspace{2cm}} \quad 42 \div 7 = \underline{\hspace{2cm}}$$

$$10 \div 2 = \underline{\hspace{2cm}} \quad 54 \div 6 = \underline{\hspace{2cm}} \quad 36 \div 9 = \underline{\hspace{2cm}} \quad 45 \div 5 = \underline{\hspace{2cm}}$$

$$72 \div 8 = \underline{\hspace{2cm}} \quad 8 \div 2 = \underline{\hspace{2cm}} \quad 72 \div 9 = \underline{\hspace{2cm}} \quad 6 \div 1 = \underline{\hspace{2cm}}$$

$$25 \div 5 = \underline{\hspace{2cm}} \quad 5 \div 5 = \underline{\hspace{2cm}} \quad 18 \div 2 = \underline{\hspace{2cm}} \quad 30 \div 5 = \underline{\hspace{2cm}}$$

CONGRATULATIONS!!! You have completed the summer math packet. You are now ready for 5th grade success! Please turn this packet into you 5th grade teacher, the first week of school,

Glossary

addends

The numbers being added in an addition operation. For example, in the number sentence $5 + 8 = 13$, the addends are 5 and 8.

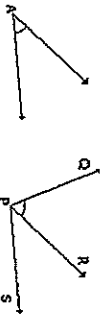
average

Also called the mean value, a measure of the size of the numbers in a set of data, found by adding up the data values and then dividing by the number of values in the set.

For example, if the scores on 3 math tests are 75, 80, and 85, then the average score is $\frac{75 + 80 + 85}{3} = 80$.

angle

Two rays sharing a common endpoint (vertex) form an angle. The angle at vertex *A* (shown below, left, in red) is referred to as $\angle A$. When a diagram contains more than one angle, the angle is referred to by the name of a point on one ray, followed by the vertex, followed by a point on the second ray. For example, the angle shown below, right, in red, is referred to as $\angle QPR$.



area

A measure of the amount of space enclosed by a plane figure. Here is how to calculate the area of some common figures:

- The area of a square with side of length s is $s \times s = s^2$.
- The area of a rectangle of length l and width w is $l \times w$.
- The area of a parallelogram with base b and height h is $b \times h$.
- The area of a triangle with base b and height h is $\frac{1}{2}bh$.

customary ruler

A straight measuring tool, usually one foot long, marked in customary units of inches and fractions of inches.



data

A collection of related items; for example, a set of test scores, the coins in your pocket, the results of a survey. Data is often organized into tables for easier viewing. Measures such as the mean (average) can be calculated for sets of numeric data items.

decimal

A way of representing a number in terms of powers of 10 or place values: ones, tens, hundreds, thousands, ..., or tenths, hundredths, thousandths, The number is written as a sequence of digits (0 through 9), each in a particular place value. For example, "two hundred sixty-eight and five tenths" is written as 268.5.

denominator

In the fraction a/b or $\frac{a}{b}$, which is the ratio of the numbers a and b with $b \neq 0$, a is the numerator and b is the denominator.

difference

The result of a subtraction operation. For example, in the number sentence $54 - 16 = 38$, the difference is 38.

digit

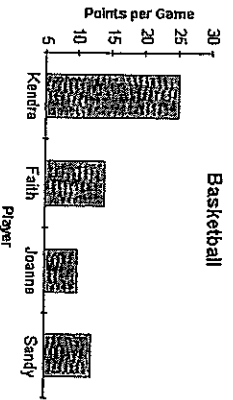
One of the numerals from 0-9 used in writing decimal numbers.

dividend

The number being divided in a division expression. For example, in the expression $38 \div 4$, the number 38 is the dividend.

capacity

The amount needed to fill a 3-dimensional object completely; also called volume.



bar graph
A visual way to display data using vertical or horizontal bars.

For example, the bar graph below shows the number of points per game scored by four basketball players. Each bar is labeled with the player's name. The height of the bar shows how many points that player scored. To find out how many points a particular player scored, compare the height of her bar with the numbers marked on the vertical axis.

divisibility rules

Rules that help determine whether one whole number is divisible by another.

- by 2: The number is even
- by 3: The sum of the digits is divisible by 3
- by 4: The last two digits are divisible by 4
- by 5: The ones digit is a 5 or a 0
- by 9: The sum of the digits is divisible by 9

divisible

If one whole number can be evenly divided by another whole number, the first number is said to be divisible by the second number. For example, 9 is divisible by 3; all even numbers are divisible by 2.

division (divide)

The arithmetic process of separating into parts. For example, 15 items can be divided into 3 sets of 5 items: $15 \div 3 = 5$.

divisor

The number doing the dividing in a division problem. In the example $20 \div 4 = 5$, 20 is the dividend, 4 is the divisor, and 5 is the quotient.

$$\begin{array}{r} 5 \\ 4 \overline{)20} \end{array}$$

equation

A number sentence equating the values of two expressions. For example: the equation $3x - 4 = 5$ expresses the fact that the value of the algebraic expression $3x - 4$ is equal to the constant 5.

equivalent

Expressions or equations to which the properties of equality have been applied. For example, given the equation $3x - 4 = 5$ we can add 4 to each side of the equation: $3x - 4 + 4 = 5 + 4$ to form the equivalent equation: $3x = 9$. We can then divide each side of the equation by 3 to form the equivalent equation: $x = 3$, which is "solved" for the variable x .

equivalent fractions

Fractions that can be simplified to the same fraction in lowest terms. For example, $\frac{2}{4} = \frac{1}{2}$.

estimation

Rounding or choosing a close approximation of a number.

event

A particular type of outcome in a probability experiment. For example, the possible outcomes of rolling a standard die are 1, 2, 3, 4, 5, or 6. We can refer to the event of rolling a 5, which includes the outcome 5; or the event of rolling an even number, which includes the outcomes 2, 4 and 6.

factor

One of the multiplicands in a product. For example, in the product, 6x, the factors are the constant 6 and the variable x .

foot

A unit of English measure. 12 inches = 1 foot.

fraction

$\frac{a}{b}$ or a/b , the ratio of a and b with $b \neq 0$; a is the numerator and b is the denominator.

frequency

The number of times a particular data item occurs in a data set.

frequency table

A table used to display how many times each data item occurs in a data set.

For example, the table below shows how many students received a grade of A, B, C, D or F on a test. The frequencies can be shown as tally marks or as counts (numbers).

Grade	Tally
A	I
B	
C	
D	
F	

function

A rule that acts upon an input to produce an output. Each input corresponds to exactly one output.

graph

Bar graphs, line graphs and pictographs are visual displays of data.

A graph may also refer to the set of all points on a number line or in the coordinate plane whose coordinates satisfy an equation or an inequality.

hexagon

A polygon with 6 sides.

hundred

A unit of place value. 100 is one hundred.

hundredth

A decimal unit of place value. 0.01 is one hundredth.

improper fraction

A fraction in which the numerator is larger than the denominator. For example, $\frac{15}{2}$.

inch

An English unit of measure. 12 inches make 1 foot.

inequality

A number sentence comparing two expressions. The strict comparisons include "less than" which is denoted by the symbol $<$; and "greater than," which is indicated $>$. The non-strict comparisons are "less than or equal to," which is indicated by the symbol \leq ; and "greater than or equal to," denoted by \geq . For example; the inequality $3x - 4 > 5$ expresses the fact that the value of the expression $3x - 4$ is greater than 5.

input

A number that a function can act upon.

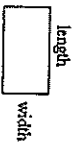
inverse operation

An operation that "undoes" another operation. For example, addition and subtraction are inverse operations; so are multiplication and division.

isolate the variable

A procedure used when solving equations or inequalities. Solve for the variable on one side of the equation/inequality.

length
A measure of how long an object is. The length is usually greater than the width.



line graph
A visual display of data in which a line is used to show changes in data over time.

liter
A metric unit of measuring capacity.

Logical Reasoning

A problem-solving strategy in which you connect the facts step by step to see what is going on in a situation or to form a conclusion.

mean
A measure of the size of the items in a numeric data set; also called the average value; found by adding up the values and then dividing by the number of values.

For example, if the scores on 3 math tests are 75, 80, and 85, then the mean score is $\frac{75 + 80 + 85}{3} = 80$.

metric system
A system of measure based on powers of 10.

milliliter
(ml) A metric unit of measuring capacity; 1,000 milliliters = 1 liter.

million

One thousand thousands: $1,000,000 = 10^6$.

mixed number

A whole number written together with a decimal or a fraction. For example, $4\frac{1}{2}$.

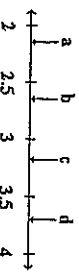
multiply

The arithmetic process of repeated addition. For example, 3 sets of 4 items is 12 items in all: $4 + 4 + 4 = 4 \times 3$

number line

A graphical way of comparing and ordering numbers.

For example, the number line below marks the placement of the numbers 2, 2.5, 3, 3.5 and 4. Letters point to the locations of other numbers. The letter b points to a number that is between 2.5 and 3. Since a is to the left of b, it refers to a number less than b. Since c is to the right of b, it points to a number that is greater than b.



numerator

In the fraction $\frac{a}{b}$ or $\frac{a}{b}$, the ratio of the numbers a and b with $b \neq 0$, a is the numerator and b is the denominator.

operation (numerical)

An action taken with numbers, such as addition, subtraction, multiplication or division.

order of operations
The rules for simplifying or evaluating expressions show which operation to do first:

1. Parentheses
2. Exponents
3. Multiplication and Division
4. Addition and Subtraction

outcome

A possible result in a probability experiment. For example, rolling a standard die can result in the outcomes 1, 2, 3, 4, 5, or 6.

output

The result when a function acts upon an input.

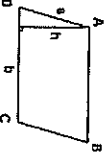
parallel segments

Segments that lie in the same plane, but do not have any points in common; they do not intersect.

parallelogram

A quadrilateral (four-sided polygon) that has two pairs of parallel sides. Opposite sides of a parallelogram are parallel and congruent. Opposite angles are congruent, and consecutive angles are supplementary.

In the diagram of parallelogram $ABCD$ below, \overline{AD} is parallel to \overline{BC} , \overline{AD} is parallel to \overline{BC} , $AB = DC = b$, and $AD = BC = a$. $\angle A$ and $\angle C$ are congruent; and $\angle B$ and $\angle D$ are also congruent. An altitude is drawn from point A to the base \overline{DC} . The perimeter of parallelogram $ABCD$ is calculated as $2(a + b)$. Its area is calculated as axh .



pattern

A set of objects grouped together by a certain rule.

percent

A part out of 100. $x\%$ is equivalent to the fraction $\frac{x}{100}$ or $\frac{x}{100}$. The phrase " $x\%$ of the number n " can be expressed as the product: $\frac{x}{100} \times n$.

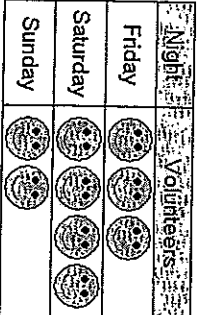
perimeter

The distance measured around a plane figure. The perimeter of a polygon is the sum of the lengths of its sides. The perimeter of a circle is called its circumference.

pie graph

A visual representation of data similar to a bar graph in which pictures are used instead of horizontal or vertical bars.

For example, the pictograph below shows the number of volunteers on three nights. The key says that each smiley face stands for 5 volunteers.



Key: = 5 volunteers

place value

A digit's position in the standard form of a number. For example, the digit 2 in in the tens place in the number 527.

probability of an event

The ratio of the number of ways in which the event can occur to the total number of outcomes.

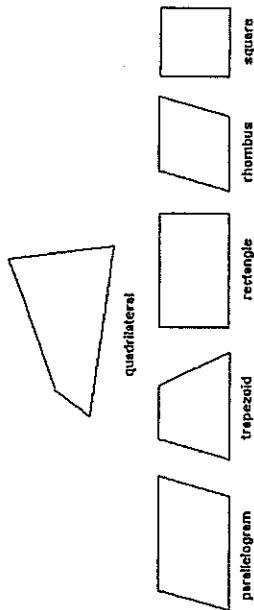
For example, in a simple coin toss, the outcomes are "heads" or "tails." If the coin is fair, either event is equally likely, so the probability of "heads" is $\frac{1}{2}$, and the probability of "tails" is also $\frac{1}{2}$.

product

The result of a multiplication operation. For example, in the number sentence $2 \times 8 = 16$, the product is 16.

quadrilateral

A four-sided polygon. Several familiar kinds of quadrilaterals are shown below.



quotient

The result of a division operation. For example, in the number sentence $36 \div 9 = 4$, the quotient is 4.

ratio

For numbers a and b where $b \neq 0$, the ratio of a to b is the fraction a/b or $\frac{a}{b}$. A ratio can also be written as $a:b$.

rectangle

A special case of a parallelogram in which adjacent sides form right angles. The diagram shows rectangle $ABCD$ with the right angle at D marked. If the dimensions of the rectangle are length l and width w , then the perimeter of the rectangle is $2l + 2w$, and its area is $l \times w$. The diagonals of a rectangle are congruent.



reduce

To put a fraction into lowest terms. Neither the numerator nor the denominator will then share any common factors except for 1. For example, the fraction $\frac{20}{25}$ can be reduced to the equivalent fraction

$$\frac{4}{5}$$

remainder

The number left over in a division operation on whole numbers. For example, when 22 is divided by 5, the quotient is 4, and the remainder is 2; note that $22 = 5 \times 4 + 2$.

rhombus

A regular parallelogram; that is, a parallelogram whose sides are all of the same length. In the diagram, rhombus $ABCD$ has sides of length s . The perimeter of $ABCD$ is $4s$. In general the diagonals of a rhombus are not of the same length except when the rhombus is a square.



rounding

Estimating to a certain place value.

scale

In a line graph, the y -coordinate of a plotted point is compared to the scale of the vertical axis to determine its value; the value of the x -coordinate is compared to the horizontal scale.

In a bar graph, the height of a bar is compared to the vertical scale to determine the value it represents.

A scale is also a ratio used in a scale drawing. It tells how many times larger or smaller the drawing is compared to the original object.

sequence

A set of numbers following a certain pattern.

side

One of the line segments that make up a polygon.

square

A rectangle whose sides are all the same length; a rhombus containing a right angle. The diagonals of a square are of equal length and are perpendicular bisectors. The diagram below shows square $ABCD$ with sides of length s and diagonal d . The perimeter of $ABCD$ is $4s$. Its area is $s \times s = s^2$.



square unit

The unit used for the area of two-dimensional objects.

sum

The result of an addition operation. For example, in the number sentence $1 + 2 + 3 = 6$, the sum is 6.

table
A chart with rows and columns used to organize and display data.

variable
A letter used to represent a number. For example, x , y , and n are commonly used variables.

tally
A mark used in a frequency table to keep track of data. Add the tallies to get a count.

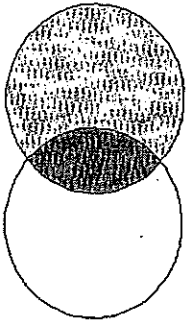
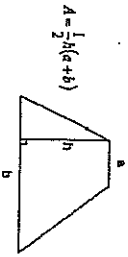
Venn diagram
A visual display of relationships often using circles. Each circle represents a set of data. The overlapping area represents items in both data sets.

tenth
A decimal place value: 0.1.

thousand
A place value: 1,000

trapezoid

A quadrilateral (four-sided polygon) with exactly one pair of parallel sides. The diagram below shows a typical trapezoid with bases a and b , and height h . The perimeter of the trapezoid is the sum of the lengths of the sides. Its area is one-half the product of the height and the sum of the lengths of the bases.



vertical
A line or line segment going up and down, perpendicular to a horizontal line.

whole numbers
The set of natural numbers and zero: {0, 1, 2, 3, ...}.

width
A measure of how wide an object is. The width is shorter than the length.



unit fraction
A fraction with 1 as the numerator, such as $\frac{1}{3}$.

trend
A relationship found in a set of data; as one variable changes, the other variable also changes in some predictable way. Positive and negative trends can sometimes be seen in line graphs and bar graphs.

Answer Key - For Parents Only

Entering 5th Grade Summer Math Packet

First Name: _____ Last Name: _____

5th Grade Teacher: _____

I have checked the work completed: _____ Parent Signature _____

Select the one best answer for each question. DO NOT use a calculator in completing this packet.

1. Which of the following sets of numbers are all of the factors of 24?

- A. 1, 3, 8, 24
- B. 2, 4, 6, 8, 12, 24
- C. 2, 3, 4, 6, 8, 12
- D. 1, 2, 3, 4, 6, 8, 12, 24**

2. Which of the following numbers is a multiple of 8?

- A. 18
- B. 28
- C. 44
- D. 56**

3. The following are all multiples of a one-digit number: 12, 24, 30, 42.

- A. 5
- B. 6**
- C. 7
- D. 8

4. Which number is a multiple of 3?

- A. 83
- B. 84**
- C. 85
- D. 86

5. Which of the following set of numbers are all multiples of 7?

- A. 35, 47, 52
- B. 35, 36, 37
- C. 35, 42, 49**
- D. 37, 47, 57

6. Al sees this sign at a copy center. What is the least number of copies Al can make without losing any money?

1. Copies cost 10¢ each.
 2. Copy machines only take quarters.
 3. Copy machines do NOT make change.
 If you make 1 copy, you will NOT get 1¢ back.

- A. 5**
- B. 30
- C. 75
- D. 150

7. Which of the following is NOT true about prime numbers?

- A. They have exactly two factors
- B. One is a factor of every prime number
- C. No prime numbers end in zero
- D. All prime numbers are odd numbers**

8. Which set does NOT contain any multiples of 4?

- A. {24, 36, 42, 54}
- B. {12, 15, 20, 24}
- C. {8, 16, 24, 34}
- D. {6, 10, 14, 18}**

9. I am a factor of 36 and a multiple of 3. What number am I?

- A. 2
- B. 4
- C. 12**
- D. 15

10. Since $4 \times 10 = 40$, and $40 \times 5 = 200$, then which of the following is true?

- A. $14 \times 45 = 200$
- B. $4 \times 10 \times 5 = 200$**
- C. $4 \times 10 \times 40 = 200$
- D. $40 \times 10 \times 5 = 200$

11. My number is a multiple of 5. It is less than 100 and has a factor of 6. What is my number?

- A. 25
- B. 36
- C. 60**
- D. 66

12. Write the products. Practice any you do not know quickly.

4	8	11	2	2	7	10	12	6	5	9	5	0
$\frac{22}{8}$	$\frac{24}{32}$	$\frac{22}{10}$	$\frac{23}{10}$	$\frac{3}{6}$	$\frac{23}{35}$	$\frac{30}{30}$	$\frac{24}{48}$	$\frac{23}{18}$	$\frac{24}{20}$	$\frac{24}{36}$	$\frac{23}{15}$	$\frac{22}{0}$
3	9	2	5	7	10	6	5	11	1	4	8	11
$\frac{23}{9}$	$\frac{25}{45}$	$\frac{21}{14}$	$\frac{25}{25}$	$\frac{24}{28}$	$\frac{24}{40}$	$\frac{24}{24}$	$\frac{22}{10}$	$\frac{25}{55}$	$\frac{23}{3}$	$\frac{25}{20}$	$\frac{22}{16}$	$\frac{24}{44}$
6	8	6	3	9	10	12	3	7	4	9	4	12
$\frac{25}{30}$	$\frac{24}{32}$	$\frac{22}{12}$	$\frac{24}{12}$	$\frac{23}{21}$	$\frac{22}{20}$	$\frac{23}{36}$	$\frac{25}{15}$	$\frac{23}{21}$	$\frac{24}{16}$	$\frac{22}{18}$	$\frac{23}{12}$	$\frac{22}{24}$
9	7	5	2	6	7	3	4	5	8	3	11	5
$\frac{28}{72}$	$\frac{26}{42}$	$\frac{210}{50}$	$\frac{21}{14}$	$\frac{29}{54}$	$\frac{27}{49}$	$\frac{28}{24}$	$\frac{26}{24}$	$\frac{29}{45}$	$\frac{27}{56}$	$\frac{29}{27}$	$\frac{27}{77}$	$\frac{29}{35}$
2	2	3	8	4	5	4	8	10	3	7	4	7
$\frac{26}{54}$	$\frac{29}{18}$	$\frac{27}{42}$	$\frac{211}{44}$	$\frac{26}{30}$	$\frac{28}{48}$	$\frac{29}{36}$	$\frac{28}{64}$	$\frac{28}{80}$	$\frac{26}{18}$	$\frac{28}{56}$	$\frac{27}{28}$	$\frac{29}{63}$
2	3	9	8	2	3	9	7	0	2	5	4	6
$\frac{26}{12}$	$\frac{212}{36}$	$\frac{29}{81}$	$\frac{26}{48}$	$\frac{28}{16}$	$\frac{26}{18}$	$\frac{27}{63}$	$\frac{28}{56}$	$\frac{29}{0}$	$\frac{212}{24}$	$\frac{28}{40}$	$\frac{29}{36}$	$\frac{26}{36}$

13. Since $5 \times 20 = 100$, which number will complete the number sentence below to make it true?
 $5 \times \underline{\hspace{1cm}} \times 5 = 100$

- A. 4**
- B. 5
- C. 20
- D. 25

14. Solve $136 - 67$.

- A. 61
- B. 69**
- C. 71
- D. 79

34. Suppose 33 photos are placed in a photo album. How many pages are needed if 3 photos fit on a page? Show your work.
- $33 \div 3$
35. Which answer means the same as \$12.49?
- A. One and two forty nine
 B. Twelve and forty nine
 C. Twelve and forty nine less
 D. Twelve and forty nine hundredths
36. Clark was given some change at the grocery store. He was given 5 one dollar bills, 6 quarters, 2 dimes and a penny. How much change did he get?
- A. \$5.62
 B. \$6.71
 C. \$6.21
 D. \$6.21
37. What decimal part of one dollar is the sum of these coins?
- $\text{\$1.00} + \text{\$0.20} + \text{\$0.05} + \text{\$0.01} = \text{\$1.26}$
- A. 2.00
 B. 0.20
 C. 0.22
 D. 0.22
38. What is another way to write 0.7 inches?
- A. 7/1000 inches
 B. 7/1000 inches
 C. 7/10 inches
 D. 7/10 inches
39. Which is equal to 0.45?
- A. $\frac{4}{5}$
 B. $\frac{45}{100}$
 C. $\frac{45}{100}$
 D. $\frac{4}{5}$

22. What is the value of this expression? $420 \div 4$
- A. 15
 B. 100
 C. 105
 D. 150
23. There are 168 lunches to be shared equally among 3 fourth-grade classes. How many lunches will go to each class?
- A. 56
 B. 165
 C. 171
 D. 504
24. What is the value of this expression? $3750 \div 10$
- A. 370
 B. 375
 C. 3740
 D. 37500
25. Which division problem is correct? Show your work.
- A. $4,836 \div 6 = 86$
 B. $4,836 \div 6 = 806$
 C. $3,215 \div 5 = 641$
 D. $3,215 \div 5 = 603$
26. If $600 \div A = 300$, what is A?
- A. 200
 B. 30
 C. 20
 D. 2
27. Fill in the blank with the number that makes this math sentence correct: $12 \times \underline{\quad} = 60$
- A. 7
 B. 4
 C. 5
 D. 5

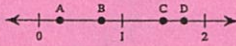
28. What value of A makes the number sentence true? $100 - A = 20$
- A. 4
 B. 5
 C. 80
 D. 120
29. What value of n makes the equation below true? $n + 7 = 21$
- A. 3
 B. 28
 C. 147
 D. 147
30. Which value of g makes the number sentence true? $g + 8 = 32$
- A. 4
 B. 24
 C. 40
 D. 256
31. What value of p makes the equation below true? $270 + p = 27$
- A. 7
 B. 8
 C. 9
 D. 10
32. Which math problem can be checked using $3 \times 6 = 18$?
- A. $18 \times 3 =$
 B. $18 + 3 =$
 C. $18 - 3 =$
 D. $18 \div 3 =$
33. The students in your class collected pop cans to raise money for a class trip. The goal for each student was to collect 150 cans each. There are 27 students in your class. How many cans would that be altogether?
- $$\begin{array}{r} 150 \\ \times 27 \\ \hline 1050 \\ 3000 \\ \hline 4050 \end{array}$$
- A. 177 cans
 B. 405 cans
 C. 1350 cans
 D. 4050 cans

15. Solve $206 - 48$.
- A. 158
 B. 242
 C. 162
 D. 262
16. Which expression is equal to 3×49 ?
- A. $3 \times (4 + 9)$
 B. $3 \times (40 + 9)$
 C. $3 \times (40 + 9)$
 D. $(3 \times 4) + (3 \times 9)$
17. Which has the same value as 57×47 ?
- A. $(50 \times 4) + (7 \times 4)$
 B. $(50 \times 5) + 2$
 C. $(50 \times 4) + 2$
 D. $(50 \times 4) + 7$
18. Which expression is equal to 83×57 ?
- A. $80 \times (3 + 5)$
 B. $(80 \times 5) + (3 \times 5)$
 C. $(5 \times 80) + 3$
 D. $(80 \times 5) + (80 \times 3)$
19. Solve the following:
- $$\begin{array}{r} 2,749 \\ \times 68 \\ \hline 22,032 \\ 17,092 \\ \hline 186,932 \end{array}$$
- $$\begin{array}{r} 156 \\ \times 78 \\ \hline 12,468 \\ 12,468 \\ \hline 3,852 \end{array}$$
- $$\begin{array}{r} 368 \\ \times 20 \\ \hline 7,360 \end{array}$$
20. What is 1486 divided by 37? Show your work.
- $$\begin{array}{r} 40 \\ \times 37 \\ \hline 286 \\ 1486 \\ \hline 4952 \end{array}$$
21. What is 2520 divide by 107? Show your work.
- $$\begin{array}{r} 23 \\ \times 107 \\ \hline 1611 \\ 2520 \\ \hline 24570 \end{array}$$

40. Which number is the same as one fourth?
(think of $\frac{1}{4}$ of 100 when converting to decimals; think of money)

- A. 0.4
- B. 0.04
- C. 0.25
- D. 0.75

41. Which point on the number line below *best* represents 1.75?



- A. Point A
- B. Point B
- C. Point C
- D. Point D

42. Match the following: Draw a line to make a match.

Four tenths ——— .08
 Eight hundredths ——— .3
 64 hundredths ——— .4
 3 tenths ——— .64

43. Divide $3,252 \div 7$

- A. 463 R11
- B. 464
- C. 464 R4

$$\begin{array}{r} 464 \text{ R}4 \\ 7 \overline{) 3252} \\ \underline{28} \\ 45 \\ \underline{42} \\ 32 \\ \underline{28} \\ 4 \end{array}$$

44. Write the following in fraction and decimal form:

Eight tenths = $\frac{8}{10} = .8$
 Twenty-seven hundredths = $\frac{27}{100} = .27$
 Five hundredths = $\frac{5}{100} = .05$
 Five tenths = $\frac{5}{10} = .5$

45. Write the following fractions in decimal form. Remember: $\frac{\text{tenths}}{\text{hundredths}}$

$\frac{4}{10} = .4$ $\frac{8}{10} = .8$ $\frac{23}{100} = .23$ $\frac{56}{100} = .56$
 $\frac{8}{100} = .08$ $\frac{5}{10} = .5$ $\frac{66}{100} = .66$ $\frac{2}{10} = .2$

46. Which number is the same as .57

- A. One half
- B. $\frac{57}{100}$
- C. Five hundredths
- D. $\frac{57}{1000}$

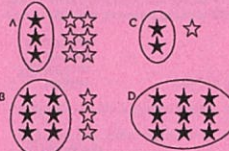
47. How is eighteen hundredths written in standard form?

- A. 0.018
- B. 0.18
- C. 18.00
- D. 1800

48. Solve each of these without using a calculator:

$4 \times 6 = 24$	$8 \times 8 = 64$	$6 \times 6 = 36$
$2 \times 9 = 18$	$5 \times 5 = 25$	$9 \times 6 = 54$
$8 \times 5 = 40$	$2 \times 2 = 4$	$3 \times 4 = 12$
$32 \div 4 = 8$	$7 \times 7 = 49$	$56 \div 7 = 8$
$72 \div 9 = 8$	$18 \div 2 = 9$	$3 \times 8 = 24$
$45 \div 9 = 5$	$4 \times 4 = 16$	$8 \times 7 = 56$
$24 \div 3 = 8$	$3 \times 3 = 9$	$3 \times 8 = 24$

49. Choose the circled group that represents $\frac{1}{3}$.



- A
- B
- C
- D

50. There are 4 red cars, 5 blue cars, and 2 green cars in the parking lot. What is the fraction of Blue cars in the parking lot?

- A. $\frac{4}{11}$
- B. $\frac{5}{9}$
- C. $\frac{5}{11}$
- D. $\frac{11}{5}$

51. What is the fraction for the shaded part of this set?



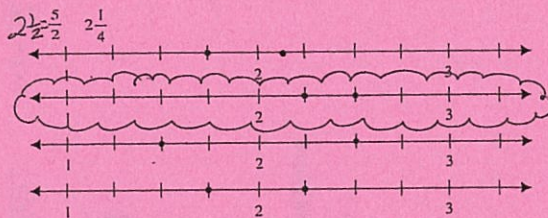
- A. $\frac{3}{8}$
- B. $\frac{3}{4}$
- C. $\frac{3}{7}$

52. Look at this set of objects. Which fraction stands for the part of the set that is shaded?

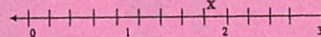


- A. $\frac{3}{5}$
- B. $\frac{5}{3}$
- C. $\frac{5}{8}$
- D. $\frac{3}{8}$

53. Which number line shows these two fractions?



54. Which of the following best represents the location of the X on the number line below?



- A. $1 \frac{1}{4}$
- B. $1 \frac{1}{2}$
- C. $1 \frac{3}{4}$
- D. $2 \frac{1}{4}$

55. How many twelfths equal $\frac{5}{6}$?

- A. $\frac{10}{12}$
- B. $\frac{11}{12}$
- C. $\frac{6}{12}$
- D. $\frac{5}{12}$

$$\frac{5 \times 2}{6 \times 2} = \frac{10}{12}$$

56. How many eighths equal $\frac{1}{4}$?

- A. $\frac{1}{8}$
- B. $\frac{2}{8}$
- C. $\frac{4}{8}$
- D. $\frac{7}{8}$

$$\frac{1 \times 2}{4 \times 2} = \frac{2}{8}$$

can be solved by drawing a picture

57. Which number is an improper fraction?

- A. $\frac{11}{12}$
- B. $\frac{5}{8}$
- C. $\frac{8}{5}$
- D. $\frac{6}{7}$

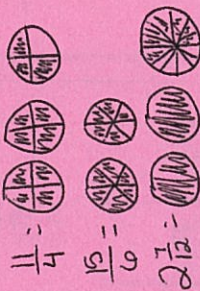
58. Convert this improper fraction into a mixed number. $11/2$

- A. $11 \frac{1}{2}$
- B. $2 \frac{1}{11}$
- C. $4 \frac{1}{2}$
- D. $5 \frac{1}{2}$**

$\frac{11}{2} = 5 \frac{1}{2}$
 $11 \div 2 = 5 \text{ r } 1$

59. Which of the following is listed from smallest to largest? Draw pictures

- A. $\frac{11}{4}, \frac{15}{8}, \frac{27}{12}$
- B. $\frac{6}{5}, \frac{3}{4}, \frac{27}{8}$
- C. $\frac{6}{8}, \frac{27}{12}, \frac{11}{4}$
- D. $\frac{3}{4}, \frac{27}{12}, \frac{11}{4}$**



60. Solve the following:

$1 \times 9 = 9$ $3 \times 6 = 18$ $9 \times 7 = 63$ $6 \times 2 = 12$
 $8 \times 6 = 48$ $2 \times 2 = 4$ $3 \times 8 = 24$ $9 \times 9 = 81$
 $24 + 3 = 27$ $7 \times 7 = 49$ $56 + 7 = 63$ $4 \times 0 = 0$
 $48 + 6 = 54$ $18 + 6 = 24$ $7 \times 3 = 21$ $7 \times 7 = 49$

61. Which of the following is a prime number?

- A. 21
- B. 33
- C. 49
- D. 53**

62. Choose the equation that is NOT true.

$A. \frac{1}{2} + \frac{3}{8} = \frac{7}{8}$
 $B. \frac{1}{6} + \frac{5}{12} = \frac{7}{12}$
 $C. \frac{3}{10} - \frac{23}{100} = \frac{7}{100}$
 $D. \frac{8}{10} - \frac{3}{5} = \frac{2}{5}$

Can be solved by drawing pictures.

$\frac{1}{2} + \frac{3}{8} = \frac{4}{8} + \frac{3}{8} = \frac{7}{8}$
 $\frac{1}{6} + \frac{5}{12} = \frac{2}{12} + \frac{5}{12} = \frac{7}{12}$
 $\frac{3}{10} - \frac{23}{100} = \frac{30}{100} - \frac{23}{100} = \frac{7}{100}$
 $\frac{8}{10} - \frac{3}{5} = \frac{8}{10} - \frac{6}{10} = \frac{2}{10} = \frac{1}{5}$

70. One hundred fourth graders at Beacon Tree Elementary are attending a field day. The teachers need to know how many hot dogs to buy. All the following are reasonable approximations EXCEPT.

- A. 100 hot dogs
- B. 200 hot dogs
- C. 500 hot dogs
- D. 6000 hot dogs**

71. A cat sleeps an average of 17 hours each day. About how many hours does a cat sleep in a month?

- A. 300 hours
- B. 500 hours**
- C. 170 hours
- D. 6000 hours

72. Find the difference: Remember "bottom bigger better borrow" and you can only borrow from next door. You can always check your answer by adding your answer and you can only borrow from next door. Find the product:

$701 - 35 = 666$
 $68 - 47 = 21$
 $41 - 27 = 14$
 $100 - 47 = 53$
 $63 - 47 = 16$
 $63 - 35 = 28$
 $59 - 28 = 31$
 $47 - 18 = 29$
 $36 - 18 = 18$

74. This pencil is about how many centimeters long?

- A. 9 cm
- B. 10 cm
- C. 11 cm
- D. 12 cm**

- A. 1400
- B. 1300
- C. 1200
- D. 1100**

69. Which of the following is closest to the product of 81 and 82? Do not use a calculator.

$80 \times 80 = 6400$

- A. 6400
- B. 7200
- C. 2200
- D. 64000

68. Which of the following is closest to the sum of 811 and 567? No calculator.

$800 + 500 = 1300$

- A. 17
- B. 57
- C. 17
- D. 57

67. How much is $1.14 + 27$? Do not use a calculator. (Line up and move decimal straight up into answer)

$27.00 + 1.14 = 28.14$

- A. 7
- B. 27
- C. 5
- D. 17

66. How much is $1.35 - 57$? Do not use a calculator.

$57.00 - 1.35 = 55.65$

- A. 54
- B. 12
- C. 1/6
- D. 5/8

65. Solve for the unknown in this equation: $2/4 + n = 3/4$

$n = 1/4$

- A. 1/6
- B. 1/4
- C. 1/2
- D. 5/8

64. Sonya needs $1/2$ teaspoon of salt for her recipe to make biscuits. How much salt will she need to make both recipes?

$1/2 + 1/4 = 3/4$

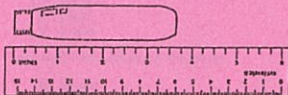
- A. 11/8
- B. 11/16
- C. 3/16
- D. 3/8

63. The distance from home to school is $7/8$ of a mile for Amy and $4/8$ of a mile from Tom.

$7/8 - 4/8 = 3/8$



75. What is the length of this light bulb to the nearest inch?



- A. 2 in.
- B. 3 in.
- C. 4 in.
- D. 5 in.

76. What is the best estimate of the area, in square centimeters, of the SHADED FIGURE on the grid below? One square equals one square centimeter.



count whole squares + half squares

- A. 5 square centimeters
- B. 11 square centimeters
- C. 13 square centimeters
- D. 15 square centimeters

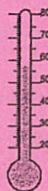
77. Which is most likely the length of a telephone book?

- A. 30 kilometers
- B. 30 centimeters
- C. 30 millimeters
- D. 30 meters

78. Brent is making a sail for a toy boat. The sail needs to be 3.55 cm wide. Which measure would be MOST useful in making the sail?

- A. To the nearest millimeter
- B. To the nearest decimeter
- C. To the nearest meter
- D. To the nearest kilometer

79. What temperature is shown on this thermometer, to the nearest degree?



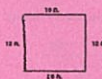
- A. 50 degrees C
- B. 55 degrees C
- C. 57 degrees C
- D. 60 degrees C

80. Bobbie was writing an article for the school newspaper about the amount of homework the 4th grade teachers were assigning. He was surprised to find out that the average student only spent 20 minutes per night doing homework. To make it sound longer, he decided to convert the time from minutes to seconds in the article. How many seconds did the average student spend on homework?

- A. 80 seconds
- B. 120 seconds
- C. 800 seconds
- D. 1,200 seconds

$20 \times 60 = 1,200$
 $1 \text{ min} = 60 \text{ sec.}$

81. Sheryl planned to buy a wall paper border for her bedroom. She measured the lengths of the walls and found the perimeter of her room. Use the picture below to determine the perimeter.

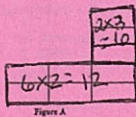


- A. 22 ft.
- B. 34 ft.
- C. 44 ft.
- D. 120 ft.

82. Sheryl may want to buy new carpeting for her room. She needs the square footage of the room to take to the store to price how much carpeting would be. What is the area of her room in the picture above?

- A. 22 square feet
- B. 120 square feet
- C. 100 square feet
- D. 144 square feet

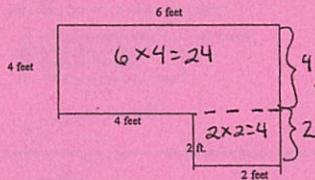
83. Using the formula for finding the area, what is the area of the figure below?



$6 + 12 = 18$

- A. 18 sq. cm.
- B. 22 sq. cm.
- C. 32 sq. cm.
- D. 54 sq. cm.

84. Find the perimeter of the figure below?



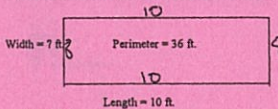
- A. 12 feet
- B. 18 feet
- C. 24 feet
- D. 36 feet

85. What is the area of the figure above?

- A. 12 square feet
- B. 28 square feet
- C. 24 square feet
- D. 36 square feet

$24 + 4 = 28$

86. Sharon had a rectangular garden with a perimeter of 36 feet. The fence surrounding it was falling down on one of the short sides (width). If the length of the garden was 10 feet, how many feet of fence did she need to replace the broken portion (width) of the fence?



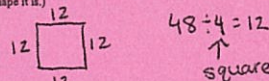
- A. 6 feet
- B. 8 feet
- C. 10 feet
- D. 26 feet

87. What is the area of the rectangle garden on the previous page (#86)?

- A. 6 square feet
- B. 18 square feet
- C. 80 square feet
- D. 100 square feet

88. If the perimeter of a square is 48 cm, what is the length of each side? (Draw a picture and think of the key word of what type of shape it is.)

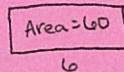
- A. 8 cm
- B. 10 cm
- C. 12 cm
- D. 24 cm



$48 \div 4 = 12$
 square

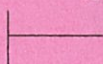
89. What is the width of a rectangle that has a length of 6 feet and an area of 60 square feet? Draw a picture.

- A. 10 feet
- B. 12 feet
- C. 24 feet
- D. 66 feet



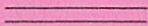
$6 \times ? = 60$

95. These lines are



- A. parallel
- B. perpendicular
- C. not intersecting
- D. intersecting

96. These lines are

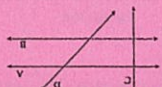


- A. parallel
- B. perpendicular
- C. intersecting
- D. none of them

97. Find the difference. Remember bottom bigger better borrow.

- 307 $-$ 147 = 160
- 821 $-$ 424 = 397
- 600 $-$ 323 = 277
- 501 $-$ 247 = 254
- 427 $-$ 247 = 180
- 800 $-$ 248 = 552

98. In the drawing below, which line is parallel to line AV ?

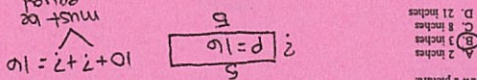


- A. none of them
- B. BH
- C. CH
- D. D

In the drawing above, which line is perpendicular to AV ?

- A. none of them
- B. BH
- C. CH
- D. D

90. What is the width of a rectangle with a length of 5 inches and a perimeter of 16 inches?



- A. 2 inches
- B. 3 inches
- C. 8 inches
- D. 21 inches

91. Sarah opens her book. What is the angle formed by the open book?



- A. less than a right angle (acute)
- B. equal to a right angle (obuse)
- C. greater than a right angle (obuse)
- D. cannot tell without a picture of a right angle

92. Which of the following is closest to 8×0.92 ?

- A. 800
- B. 80
- C. 8
- D. 0.8

$8 \times 0.92 \rightarrow$ round to 1
 $8 \times 1.0 = 8$

93. What is the size of this angle?



- A. acute
- B. equal to a right angle
- C. obtuse
- D. cannot tell without a picture of a right angle

94. Which angle is a right angle?



99. Which type of triangle has only 2 equal sides, like the drawing below?



- A. equilateral triangle
- B. isosceles triangle
- C. pyramid
- D. right triangle

100. Which geometric figure is shown here?



- A. equilateral triangle
- B. isosceles triangle
- C. right triangle
- D. pyramid

101. Answer the following questions on the figure below.



How many vertices does the box above have?

- A. 3 vertices
- B. 10 vertices
- C. 18 vertices
- D. 18 faces

How many faces does the box above have?

- A. 5 faces
- B. 8 faces
- C. 10 faces
- D. 18 faces

How many edges does the box above have?

- A. 3 edges
- B. 9 edges
- C. 12 edges
- D. 18 edges

102. Answer the following questions using the figure below.



How many faces does this figure have?

- A. 2 faces
- B. 3 faces
- C. 4 faces
- D. 5 faces

How many vertices does the figure in #102 have?

- A. 2 faces
- B. 1 face
- C. 4 faces
- D. 5 faces

How many edges does the figure in #102 have?

- A. 3 edges
- B. 4 edges
- C. 5 edges
- D. 8 edges

103. Which of these shapes can be folded in half so that both halves are the same (line symmetry)? Show this by drawing the line of symmetry on the figure, then choose the correct answer.



104. Which transformation has taken place to figure A to create figure B?



- A. Translation
- B. Copy
- C. Flip
- D. Slide

105. Sharon had a bag of 12 marbles. She gave 8 of the marbles to Don. Which fractional part of the marbles did Sharon have left?

- A. $\frac{8}{12}$
- B. $\frac{4}{8}$
- C. $\frac{4}{12}$
- D. $\frac{1}{4}$

106. Laura wrote 200 words on the first page of her journal. After the second page, she had 400 words. If the pattern continues, how many pages will it take her to write 1000 words? Continue to fill in the table to find the answer.

Page Number	Words	Total words
1	200	200
2	200	400
3	200	600
4	200	800
5	200	1,000 *
6		
7		

$1000 \div 200 = 5$

- A. 3
- B. 4
- C. 5
- D. 6

107. Answer the following questions using this set of data. (2, 2, 3, 5, 10, 10, 10)

What is the median?

- A. 2
- B. 3
- C. 7
- D. 8

What is the mode?

- A. 2
- B. 3
- C. 8
- D. 10

What is the range?

- A. 5
- B. 8
- C. 9
- D. 10

108. What is the length of a rectangle with a width of 4 centimeters and a perimeter of 28 centimeters?

- A. 7 centimeters
- B. 10 centimeters
- C. 20 centimeters
- D. 24 centimeters

$4 + 4 + 7 + 7 = 28$
 $4 + 4 + 7 + 7 = 28$
 must be even

109. Answer the following questions using this set of data.

- 8 11 18 11 20 9 8, 9, 11, 11, 18, 20

What is the median?

- A. 8
- B. 9
- C. 11
- D. 20

What is the range?

- A. 8
- B. 12
- C. 18
- D. 20

What is the mode?

- A. 8
- B. 9
- C. 11
- D. 15

110. In which set is the median the same as the range?

- A. 3, 4, 6, 8, 3, 4
- B. 2, 4, 5, 6, 4
- C. 1, 5, 6, 10, 4
- D. 7, 8, 3, 6, 1

111. Divide $875 \div 5$. Show your work!

$= 175$

112. Multiply 46 by 78. Show your work!

$$\begin{array}{r} 46 \\ \times 78 \\ \hline 3588 \end{array}$$

113. How do you write 45 hundredths as a fraction and decimal?

$\frac{45}{100}$ fraction
 0.45 decimal

114. The chart below shows the number of minutes that Katie spent on her computer each day for one week.

Day	Number of Minutes
Sunday	59
Monday	65
Tuesday	42
Wednesday	84
Thursday	64
Friday	37
Saturday	46

What number represents the median of the data in the chart?

- A. 47
- B. 53
- C. 59
- D. 37

37, 42, 46, 59, 64, 65, 84

What is the range of the data in the chart?

- A. 37
- B. 47
- C. 88
- D. 92

$84 - 37 = 47$

115. What is the median for this set of numbers?

- A. 4
- B. 7
- C. 8
- D. 13

2, 4, 4, 7, 8, 14, 15

116. Find the range of: 4, 12, 13, 6, 5, 8

- A. 4
- B. 8
- C. 9
- D. 13

$$\frac{13}{4} - 4 = 9$$

117. Find the median of: 9, 4, 3, 7, 2, 8, 4

- A. 4
- B. 5
- C. 6
- D. 7

2, 3, 4, 4, 7, 8, 9

118. Find the sum or difference. Watch the signs.

135	546	71	50	426
+479	+137	-18	-26	-135
614	683	53	24	291
17	54	135	3.2	4.8
+18	-39	-53	+2.8	-2.6
35	15	82	6.0	2.2
400	621	842	699	73
-37	-57	-51	+23	+45
363	564	791	722	118

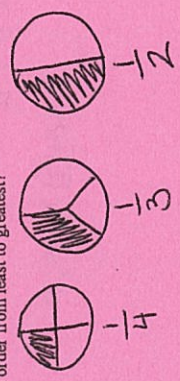
119. What is the range of the data set below?

- A. 2
- B. 8
- C. 9
- D. 10

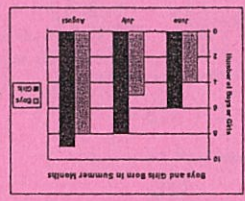
$$10 - 1 = 9$$

120. Which shows the fractions in order from least to greatest?

- A. $\frac{1}{4}, \frac{1}{3}, \frac{1}{2}$
- B. $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}$
- C. $\frac{1}{3}, \frac{1}{4}, \frac{1}{2}$



123. How many more girls were born in June through August than boys?

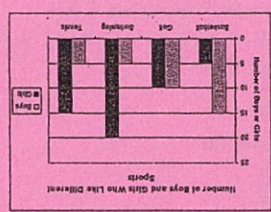


$$8 + 8 + 8 = 24 \text{ girls}$$

$$6 + 6 + 4 = 16 \text{ boys}$$

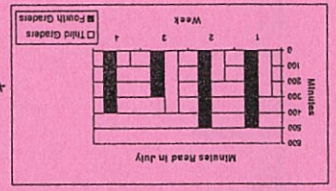
$$24 - 16 = 8$$

124. How many more boys like basketball than girls?



$$15 - 10 = 5$$

121. During July, the third and fourth graders kept track of the number of minutes they read each week. Use this graph to figure out how many minutes total the third graders read in July.



$$300 + 300 + 300 + 300 = 1200$$

122. How many more total seeds did Liz split across the line than Donald, in all 4 rounds?



$$10 + 10 + 10 + 10 = 40$$

$$7 + 7 + 7 + 7 = 28$$

$$40 - 28 = 12$$

- A. 250
- B. 400
- C. 1000
- D. 2700

125. Do the following divisions. Then check your answer. Show your work. No calculators!

A. $1524 \div 6 = 254$
 Check your work:

$$\begin{array}{r} 254 \\ \times 6 \\ \hline 1524 \end{array}$$

B. $380 \div 10 = 38$
 Check your work:

$$\begin{array}{r} 38 \\ \times 10 \\ \hline 380 \end{array}$$

C. $4230 \div 10 = 423$
 Check your work:

$$\begin{array}{r} 423 \\ \times 10 \\ \hline 4230 \end{array}$$

D. $192 \div 4 = 48$
 Check your work:

$$\begin{array}{r} 48 \\ \times 4 \\ \hline 192 \end{array}$$

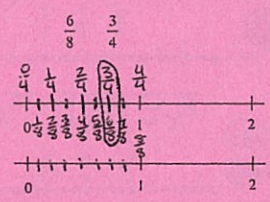
E. $153 \div 5 = 30.6$
 Check your work:

$$\begin{array}{r} 30.6 \\ \times 5 \\ \hline 153.0 \end{array}$$

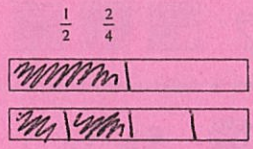
126. Shade 3/5 of the boxes below:



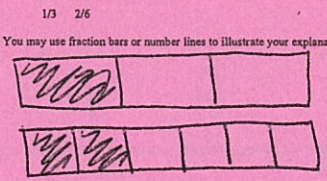
127. Place these two fractions on the two number lines below to show why they are equivalent.



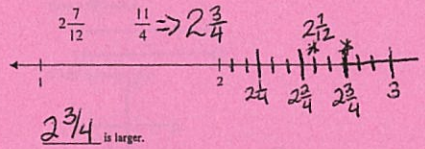
128. Show how these two fractions are equal by shading some of each rectangle.



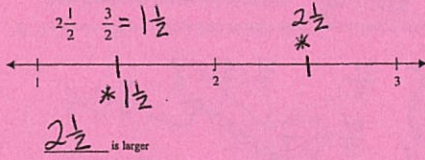
129. Explain how these two fractions are equal.



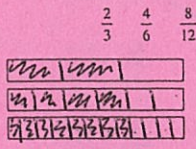
130. Locate these two fractions on the number line, label each, and then explain which is larger.



131. Locate and label these two fractions on the number line. Then tell which is larger.



132. On the strips below, shade and label the following fractions.



Largest fraction _____
 Mid size fraction _____
 Smallest fraction _____
 } they are all equal

140. Find the products.
Any multiplication problem you do not know quickly please practice on flash cards.

6	12	x2	24	4	x4	16	7	x2	14	5	x4	20	0	x8	0	3	x8	24	6	x4	24	5	x5	25	7	x3	21	9	x2	18	4	x4	16	3	x8	24	8	x3	24			
6	36	x2	72	2	x12	24	3	x6	18	8	x2	16	16	x2	32	7	x12	84	8	x7	56	4	x4	16	4	x4	16	9	x2	18	4	x8	32	4	x8	32	4	x4	16	9	x4	36
4	x7	28	5	x0	0	0	x3	0	3	x0	0	8	x8	64	4	x4	16	9	x7	63	2	x1	2	5	x5	25	5	x9	45	5	x9	45	5	x9	45	7	x7	49	7	x7	49	
8	x8	64	6	x6	36	8	x7	56	1	x2	2	9	x6	54	9	x6	54	8	x6	48	9	x8	72	1	x1	1	2	x1	2	10	x1	10	10	x1	10	3	x4	12	3	x4	12	
8	x0	0	8	x1	8	8	x2	16	8	x3	24	8	x4	32	8	x5	40	8	x6	48	8	x7	56	8	x8	64	2	x6	12	6	x6	36	12	x6	72	6	x12	72	6	x12	72	
8	x4	32	4	x1	4	4	x2	8	9	x11	99	11	x9	99	11	x9	99	7	x11	77	11	x7	77	0	x2	0	5	x10	50	5	x10	50	5	x10	50	3	x3	9	3	x3	9	
4	x12	48	4	x6	24	4	x3	12	12	x11	132	12	x11	132	12	x11	132	12	x11	132	12	x11	132	12	x11	132	12	x11	132	12	x11	132	12	x11	132	12	x11	132				

139. Using a ruler and a tool or object with a 90 degree corner, draw and label all of the following:

- A pair of perpendicular lines.
- A pair of parallel lines.
- Draw a right angle.
- Draw an obtuse angle.

(EX) A pair of intersecting lines that is not perpendicular.

Answers will vary.

138. Solve the following problems:

$$\frac{4}{2} + \frac{4}{2} = \frac{4}{1} = 4$$

$$\frac{4}{2} - \frac{4}{2} = \frac{4}{2} = 2$$

$$\frac{8}{1} - \frac{4}{4} = \frac{8}{1} - 1 = \frac{7}{1} = 7$$

$$\frac{8}{1} + \frac{4}{4} = \frac{8}{1} + 1 = \frac{9}{1} = 9$$

$$\frac{12}{4} - \frac{1}{3} = \frac{12}{4} - \frac{4}{12} = \frac{36}{12} - \frac{4}{12} = \frac{32}{12} = \frac{8}{3}$$

$$\frac{12}{5} - \frac{1}{3} = \frac{12}{5} - \frac{5}{15} = \frac{36}{15} - \frac{5}{15} = \frac{31}{15}$$

These may also be solved by drawing pictures of fraction bars.

136. Write the following fractions in order from least to greatest. Draw a picture.

$\frac{11}{3} = 3\frac{2}{3}$, $\frac{2}{3}$, $\frac{1}{6}$, $\frac{12}{3} = 4$, $\frac{3}{2} = 1\frac{1}{2}$

137. Write the following fractions in order from greatest to least.

$\frac{1}{3} = \frac{4}{12}$, $\frac{1}{4} = \frac{3}{12}$, $\frac{3}{4} = \frac{9}{12}$, $\frac{1}{2} = \frac{6}{12}$

134. Write this fraction as a mixed number. Then create a picture that represents it as a mixed number.

$\frac{13}{3} = 4\frac{1}{3}$

135. Identify the shaded portion of this picture as a mixed number and an improper fraction.

$2\frac{2}{3} = \frac{8}{3}$

133. Locate and label this fraction on the number line. Then write it as a mixed number.

$\frac{5}{2} = 2\frac{1}{2}$

141. Find the quotients.

$$\frac{1}{2} \div \frac{3}{9} = \frac{4}{8} \quad \frac{1}{7} \div \frac{1}{49} = \frac{2}{7} \quad \frac{2}{40} \div \frac{1}{11} = \frac{1}{2} \quad \frac{6}{54} \div \frac{6}{13} = \frac{3}{12} \quad \frac{2}{12} \div \frac{2}{24} = \frac{2}{24}$$

$$\frac{1}{8} \div \frac{9}{63} = \frac{5}{40} \quad \frac{0}{50} \div \frac{1}{44} = \frac{3}{412} \quad \frac{5}{945} \div \frac{7}{63} = \frac{1}{6} \quad \frac{1}{312} \div \frac{4}{17} = \frac{7}{30} \quad \frac{0}{30} \div \frac{9}{19} = \frac{9}{19}$$

$$\frac{8}{216} \div \frac{1}{33} = \frac{5}{15} \quad \frac{4}{520} \div \frac{6}{318} = \frac{2}{36} \quad \frac{3}{515} \div \frac{0}{70} = \frac{3}{927} \quad \frac{4}{416} \div \frac{3}{721} = \frac{3}{420} \quad \frac{5}{420} \div \frac{4}{728} = \frac{4}{728}$$

$$\frac{2}{816} \div \frac{1}{321} = \frac{2}{918} \quad \frac{6}{424} \div \frac{3}{26} = \frac{3}{18} \quad \frac{1}{535} \div \frac{5}{735} = \frac{9}{327} \quad \frac{6}{636} \div \frac{8}{324} = \frac{0}{20} \quad \frac{8}{432} \div \frac{8}{432} = \frac{8}{432}$$

$$\frac{1}{99} \div \frac{9}{436} = \frac{1}{642} \quad \frac{8}{540} \div \frac{8}{64} = \frac{2}{714} \quad \frac{5}{630} \div \frac{1}{856} = \frac{5}{15} \quad \frac{1}{428} \div \frac{8}{756} = \frac{3}{824} \quad \frac{4}{624} \div \frac{4}{624} = \frac{4}{624}$$

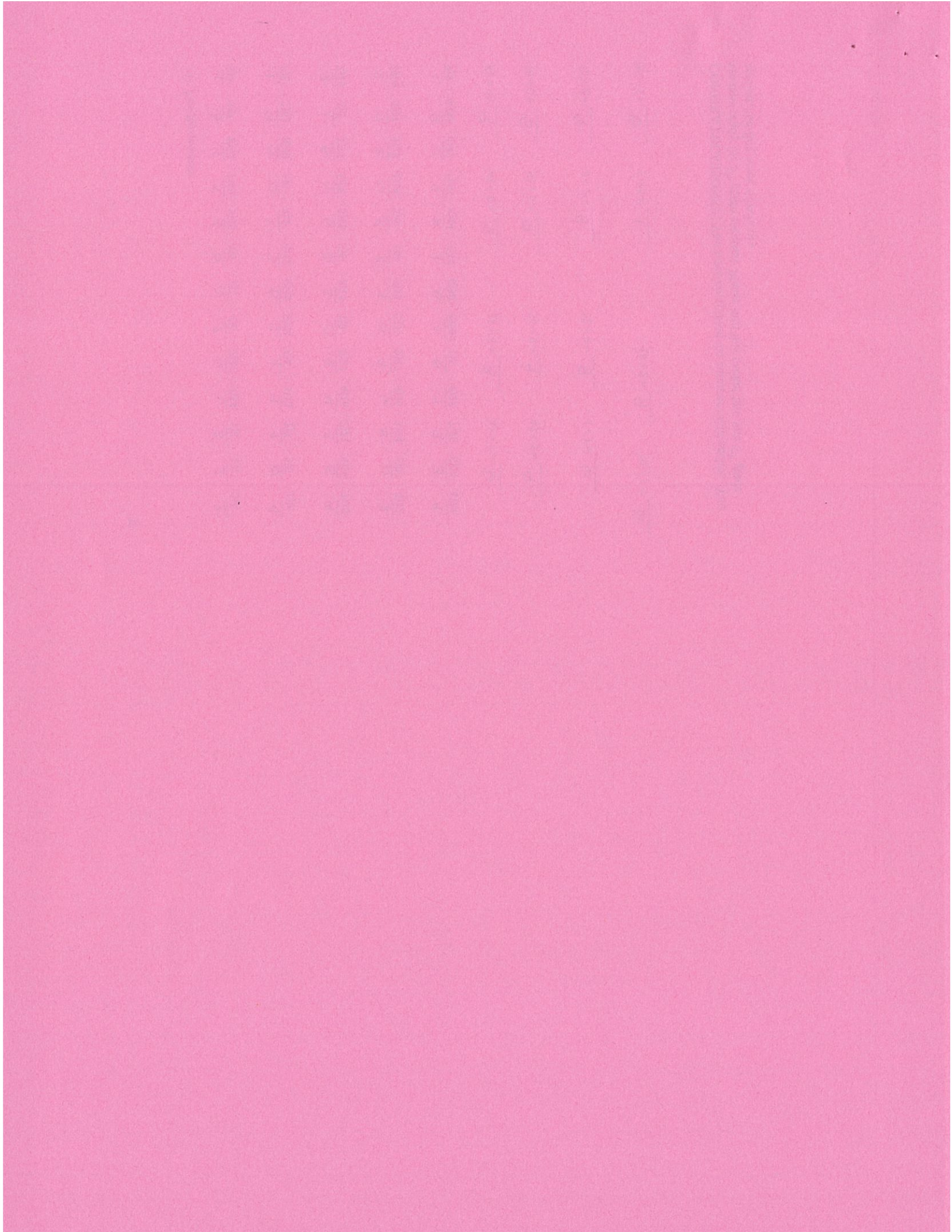
$$81 + 9 = \underline{9} \quad 48 + 6 = \underline{8} \quad 18 + 6 = \underline{3} \quad 42 + 7 = \underline{6}$$

$$10 + 2 = \underline{5} \quad 54 + 6 = \underline{9} \quad 36 + 9 = \underline{4} \quad 45 + 5 = \underline{9}$$

$$72 + 8 = \underline{9} \quad 8 + 2 = \underline{4} \quad 72 + 9 = \underline{8} \quad 6 + 1 = \underline{6}$$

$$25 + 5 = \underline{5} \quad 5 + 5 = \underline{1} \quad 18 + 2 = \underline{9} \quad 30 + 5 = \underline{6}$$

CONGRATULATIONS!!! You have completed the summer math packet. You are now ready for 5th grade success! Please turn this packet into you 5th grade teacher, the first week of school.



Area

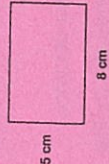
The number of square units needed to cover a fraction.

● Square Units

Area is expressed in **square units (units²)**. A square unit is a square, one of whose sides is a given unit of length. Square units can be in inches, feet, centimeters, meters, or other units.

● Rectangles and Squares

The formula for the area of a rectangle is $A = \text{length} \times \text{width}$, or $A = lw$.



$$A = 8 \text{ cm} \times 5 \text{ cm}$$

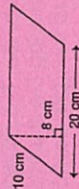
$$A = 40 \text{ cm}^2$$

The area of the rectangle is 40 cm².

Since a square has 4 equal sides, multiply the length of one of the sides by itself to find its area. To find the area of a square, use the formula $A = s^2$.

● Parallelogram

The formula for the area of a parallelogram is $A = \text{base} \times \text{height}$ or $A = bh$.



$$A = 20 \text{ cm} \times 8 \text{ cm}$$

$$A = 160 \text{ cm}^2$$

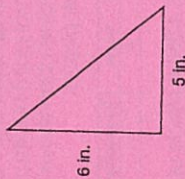
The area of the parallelogram is

● Triangle

The formula for the area of a triangle is

$$\text{Area} = \frac{1}{2} \times \text{base} \times \text{height} \text{ or } A = \frac{1}{2}bh.$$

Find the area of this triangle.



$$A = \frac{1}{2} \times 5 \text{ in.} \times 6 \text{ in.}$$

$$A = 15 \text{ in.}^2$$

The area of the triangle is 15 in.².

● Circle

The formula for the area of a circle is $\text{Area} = \pi \times \text{radius}^2$ or $A = \pi r^2$. Let 3.14 represent π .

Find the area of this circle.



$$A = 3.14 \times 10^2$$

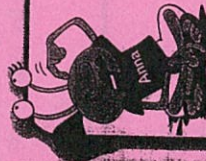
$$A = 3.14 \times 100 \text{ m}^2$$

$$A = 314 \text{ m}^2$$

The area of the circle is 314 m².

Do I Understand?

1. What is the area of a triangle with a base of 8 inches and a height of 6 inches?
_____ in.²
2. What is the area of a circle with a radius of 6 centimeters?
_____ cm²



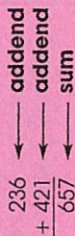
ANSWERS: 1. 24 in.² 2. 113.04 cm²

Addition

An operation on two or more numbers to find a sum.

● Parts of Addition

These are the parts of an addition problem.



● Whole Numbers

Add the digits from right to left. **Regroup** if necessary.

$$\begin{array}{r} 11 \\ 985 \\ + 627 \\ \hline 1,612 \end{array}$$

● Decimals and Money

Decimal and money amounts are also added from right to left.

$$\begin{array}{r} 1111 \\ \$2,782.62 \\ + 1,837.54 \\ \hline \$4,620.16 \end{array}$$

Remember to place the decimal point in the sum. If it is a money amount, insert the dollar sign (\$).

● Fractions with Like Denominators

Add the numerators. The denominator remains the same. Write the sum in simplest form if possible.

$$\frac{3}{8} + \frac{7}{8} = \frac{3+7}{8} = \frac{10}{8} = 1\frac{1}{4}$$

● Mixed Numbers with Like Denominators

Add the fraction part, the whole-number part, and then add the sums. Write the sum in simplest form.

$$2\frac{7}{10} + 3\frac{1}{10} = \left(\frac{7}{10} + \frac{1}{10}\right) + (2 + 3) = \frac{8}{10} + 5 = 5\frac{8}{10} = 5\frac{4}{5}$$

● Fractions with Unlike Denominators

Add $\frac{3}{5} + \frac{1}{4}$.

Write equivalent fractions using the LCD.

$$\frac{3}{5} = \frac{12}{20} \quad \frac{1}{4} = \frac{5}{20}$$

Add the numerators. Simplify if possible.

$$\frac{12}{20} + \frac{5}{20} = \frac{17}{20}$$

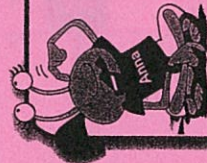
● Mixed Numbers with Unlike Denominators

Follow the same steps as you would with fractions, but remember to add the whole-number part.

$$3\frac{1}{2} + 4\frac{2}{5} = 3\frac{5}{10} + 4\frac{4}{10} = \left(\frac{5}{10} + \frac{4}{10}\right) + (3 + 4) = \frac{9}{10} + 7 = 7\frac{9}{10}$$

Do I Understand?

- Add. Write the answer in simplest form for problem 2.
1. \$283.76
+ 472.48
 2. $3\frac{1}{3} + 5\frac{7}{12}$



ANSWERS: 1. 766.24 2. $8\frac{11}{12}$

Compare and Order

(Continued)

Order Numbers

Numbers can be ordered from least to greatest or from greatest to least. Order the following decimals from least to greatest:

37.26, 37.42, 30.79

Tens	Ones	Tenths	Hundredths
3	7	.	2
3	7	.	4
3	0	.	7

Order the digits from left to right.

Since $0 < 7$, 30.79 is the least number.

Compare 37.26 and 37.42

Since $2 < 4$, 37.26 < 37.42

The order from least to greatest is:

30.79, 37.26, 37.42.

Compare Fractions with Like Denominators

Fractions with like denominators can be compared by their numerators. The greater the numerator, the greater the fraction.

For example, $\frac{1}{8} < \frac{3}{8}$.

Compare Fractions with Like Numerators

Fractions with like numerators can be compared by their denominators. The greater the denominator, the less value the fraction has.

For example, $\frac{2}{5} > \frac{2}{8}$.

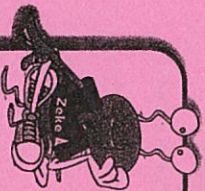
Do I Understand?

Compare. Use $>$, $<$, or $=$.

2. $\frac{3}{5} \bigcirc \frac{2}{4}$

3. $\frac{2}{5} \bigcirc \frac{1}{3}$

4. $3 \bigcirc -2$



Decimals

A number with at least one digit to the right of a decimal point.

Place Value

A decimal is a number with a decimal point (.). A decimal point separates the whole numbers from the part that represents part of one whole. As with whole numbers, each digit to the right of the decimal point has its own value. The place-value chart shows the names of the places.

ones	tenths	hundredths	thousandths
4	.	8	5
			3

The decimal 4.853 is made up of 4 ones, 8 tenths, 5 hundredths, and 3 thousandths.

Read Decimals

To read a decimal, separate the whole-number part from the part of a whole. Read the part of the whole as a fraction of the number over the least place of the decimal.

Read the decimal 8.272.

Read the whole number part first. The word *and* separates the whole-number part from the part of a whole.

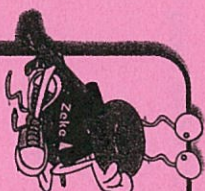
eight and

Read the part of the whole.

two hundred seventy-two thousandths

Do I Understand?

1. What is $\frac{3}{8}$ written as a decimal?
2. What is 0.36 written as a fraction in simplest form?



Change Decimals to Fractions

Change 0.65 into a fraction in simplest form.

Write the decimal as the numerator, with its place as the denominator: $\frac{65}{100}$. Simplify the fraction. $\frac{65}{100} \div \frac{5}{5} = \frac{13}{20}$

Change Fractions to Decimals

Change $\frac{5}{8}$ to a decimal.

Divide the numerator by the denominator. The quotient is a decimal.

$$5 \div 8 = 0.625$$

Change Decimals to Percents and Percents to Decimals

Change 0.72 to a percent.

Multiply the decimal by 100 and insert a percent sign (%). The process is essentially moving the decimal point two places to the right. So, $0.72 = 72\%$

To change a percent to a decimal, divide the percent by 100 and remove the percent sign. So, $39\% = 0.39$.

Factors and Multiples

FACTOR: a number that is multiplied to get a product
MULTIPLE: a number that is the product of a number and any whole number

● Factors and Products

Numbers that are multiplied to get a product are called **factors**. A product must have at least two factors, although they may be the same number. Products that have the same two factors are called **square numbers**.

$$\begin{array}{rcccl} 8 & \times & 7 & = & 56 \\ \text{factor} & & \text{factor} & & \text{product} \end{array}$$

● Factors of a Number

The factors of a number are those numbers in which it is possible to find a product.

For example, the factors of 54 are 1, 2, 3, 6, 9, 12, 18, 27, and 54.

● Prime Factorization

The **prime factorization** of a number is that number expressed as the product of its prime factors.

For example, the prime factorization of 36 is $2 \times 2 \times 3 \times 3$ or written with exponents as $2^2 \times 3^2$.

● Multiples of a Number

A **multiple** is a number that is the product of a number and any whole number.

For example, the first five multiples of 8 are 8, 16, 24, 32, 40, and 48.

● Greatest Common Factor (GCF)

The **greatest common factor (GCF)** of 2 or more numbers is the greatest whole number that is a common factor of the numbers. For example, find the GCF of 24 and 32.

- List the factors of both numbers.
24: 1, 2, 3, 4, 6, 8, 12, 24
32: 1, 2, 4, 8, 16, 32

- Find the common factors:
1, 2, 4, and 8.

The GCF of 24 and 32 is 8.

● Least Common Multiple (LCM)

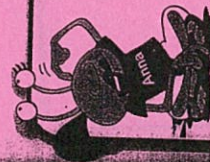
The **least common multiple** of 2 or more numbers is the least whole number greater than 0 that is a multiple of each of the numbers. For example, find the LCM of 5 and 7.

- List the first multiples of 5 and 7:
5: 5, 10, 15, 20, 25, 30, 35, ...
7: 7, 14, 21, 28, 35, ...

- Find the common multiple: 35
The LCM of 5 and 7 is 35.

Do I Understand?

- What is the prime factorization of 20?
- What is the GCF of 27 and 45?



SEVEN

Fractions

Number that names part of a whole or a group

● Parts of a Fraction

The **denominator**, or bottom number, tells how many equal parts there are in a **fraction**. The **numerator**, or top number, tells how many of those equal parts are being considered.

$$\frac{3}{8} \begin{array}{l} \longleftarrow \text{numerator} \\ \longleftarrow \text{denominator} \end{array}$$

● Use Fractions

A fraction can name parts of a whole or part of a group



The fraction $\frac{3}{5}$ represents the part of the rectangle that is shaded. The fraction $\frac{4}{9}$ represents the black marbles.

● Equivalent Fractions

Equivalent fractions are two or more different fractions that name the same amount. To find an equivalent fraction, multiply or divide the numerator and denominator of the fraction by the same number.

For example, $\frac{2}{3}$ and $\frac{6}{9}$ are equivalent fractions since $\frac{2}{3} \times \frac{3}{3} = \frac{6}{9}$.

● Simplest Form

A fraction written in **simplest form** has 1 for the only number that evenly divides into both the numerator and denominator. For example, write $\frac{9}{12}$ in simplest form.

$$\frac{9}{12} \rightarrow \frac{9 \div 3}{12 \div 3} = \frac{3}{4}$$

● Mixed Numbers and Improper Fractions

A **mixed number** is a number that has a whole-number part and a fraction part. An **improper fraction** is a fraction that has a numerator that is greater than or equal to the denominator.

To convert a mixed number into an improper fraction, multiply the whole number part by the denominator and then add the numerator to the product. The denominator remains the same. For example,

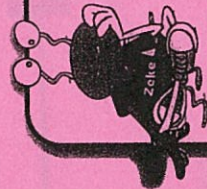
$$3\frac{2}{5} = \frac{(3 \times 5) + 2}{5} = \frac{17}{5}$$

To convert an improper fraction to a mixed number, divide the numerator by the denominator. The remainder will be the numerator of the fraction part. For example,

$$\frac{21}{4} = 21 \div 4 = 5\frac{1}{4}$$

Do I Understand?

- What is $\frac{12}{15}$ written in simplest form?
- What is $3\frac{7}{12}$ written as an improper fraction?



SEVEN

Polygons

A closed figure made of line segments.

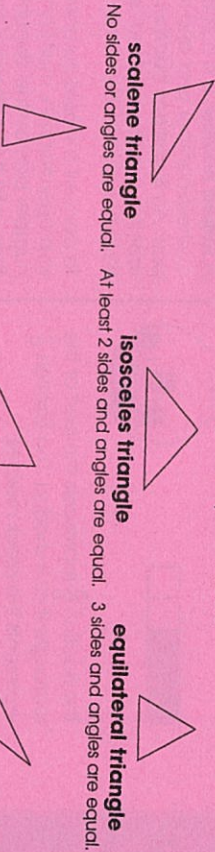
Examples of Polygons

A polygon is a closed figure made of line segments. If a figure has a curved side then it is not a polygon. Polygons are **two-dimensional figures**.

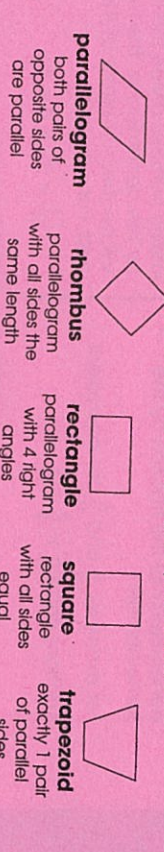


Classifications of Triangles

The sum of the angle measures of a triangle is equal to 180° .



Classification of Quadrilaterals



Do I Understand?

1. A triangle has angle measures of 20° , 75° , 85° . Classify it as specific as possible.

_____ triangle

ANSWERS

Properties of Addition and Multiplication

Commutative Property

The **commutative property of addition** states that the order of the addends does not change the sum. For example: $25 + 18 = 18 + 25$.

The **commutative property of multiplication** states that the order of the factors does not change the product. For example: $15 \times 12 = 12 \times 15$.

Associative Property

The **associative property of addition** states the grouping of the addends does not change the sum. For example: $75 + (25 + 56) = (75 + 25) + 56$.

The **associative property of multiplication** states the grouping of the factors does not change the product. For example: $12 \times (5 \times 7) = (12 \times 5) \times 7$.

Identity Property

The **identity property of addition** states that when one addend is 0, the sum is equal to the other addend. For example: $32 + 0 = 32$.

The **identity property of multiplication** states that when one factor is 1, the product is equal to the other factor. For example: $27 \times 1 = 27$.

Do I Understand?

1. Use the associative property of addition to find the sum of $67 + 33 + 85$.

2. Use the distributive property to find the product of 87×8 .

ANSWERS

Zero Property of Multiplication

The **zero property of multiplication** states that when 0 is multiplied by a number, the product is 0. For example: $22 \times 0 = 0$

Distributive Properties of Multiplication

The **distributive property of multiplication over addition** states that to multiply a sum by a number, you can multiply each addend by the number and add the products. For example: $42 \times 7 = (40 \times 7) + (2 \times 7)$

$280 + 14 = 294$

The **distributive property of multiplication over subtraction** states that to multiply a difference of two numbers by a third number, multiply the first two numbers by the third and then find the difference of the products. For example: $78 \times 9 = (80 \times 9) - (2 \times 9)$

$$720 - 18 = 702$$

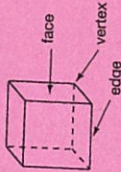
Solid Figures

figure that has depth

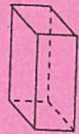
Examples of Solid Figures

Solid figures are figures that are not flat. They have depth. Solid figures are called **space figures** or **three-dimensional figures**. Solid figures can be classified by the number of curved surfaces, flat sides, **faces**, **edges**, and **vertices**.

A face is a flat surface. An edge is where faces meet. A vertex is where the edges meet. The following solid figures have only flat faces.



cube
6 faces
12 edges
8 vertices



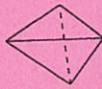
rectangular prism
6 faces
12 edges
8 vertices



triangular prism
5 faces
9 edges
6 vertices

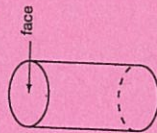


rectangular pyramid
5 faces
8 edges
5 vertices



triangular pyramid
4 faces
6 edges
4 vertices

The solid figures that have curved surfaces are shown below.



cylinder
2 flat faces
1 curved surface
2 edges
0 vertices



cone
1 flat face
1 curved surface
1 edge
1 vertex



sphere
0 flat faces
1 curved surface
0 edges
0 vertices

Subtraction

An operation on two numbers that tells how many are left when some are taken away.

Parts of a Problem

These are the parts of a subtraction problem.

$$\begin{array}{r} 294 \\ - 177 \\ \hline 117 \end{array}$$

← minuend
 ← subtrahend
 ← difference

Whole Numbers

To subtract whole numbers, subtract from right to left. Regroup if necessary.

$$\begin{array}{r} 7\overset{16}{6} \\ - 876 \\ \hline 387 \end{array}$$

Money and Decimals

Subtract money and decimals as you would with whole numbers. Remember to place the decimal point in the difference.

$$\begin{array}{r} 4\overset{10}{0} \\ 37.05 \\ - 14.73 \\ \hline 22.32 \end{array}$$

Fractions with Like Denominators

Subtract the numerators. The denominator remains the same unless the fraction can be simplified.

$$\frac{9}{10} - \frac{3}{10} = \frac{9-3}{10} = \frac{6}{10} = \frac{3}{5}$$

Fractions with Unlike Denominators

Subtract $\frac{5}{6} - \frac{3}{4}$.

Write equivalent fractions using the LCD.

$$\frac{5}{6} = \frac{10}{12} \quad \frac{3}{4} = \frac{9}{12}$$

Subtract the numerators.

$$\frac{10}{12} - \frac{9}{12} = \frac{1}{12}$$

Mixed Numbers with Like Denominators

Subtract the fraction part first, and then the whole-number part. It may be necessary to rename a whole number as an improper fraction.

$$3\frac{7}{10} - 1\frac{9}{10} = 2\frac{7}{10} - 1\frac{9}{10} = 1\frac{8}{10} = 1\frac{4}{5}$$

Mixed Numbers with Unlike Denominators

First find the LCD. It may be necessary to rename the whole-number part as an improper fraction.

$$\text{Subtract } 2\frac{1}{2} - 1\frac{5}{6}$$

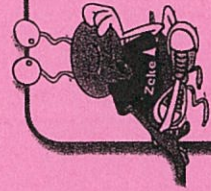
Write equivalent fractions using the LCD.

$$2\frac{1}{2} = 2\frac{3}{6} = 1\frac{9}{6}$$

Rename the minuend and subtract.

$$1\frac{9}{6} - 1\frac{5}{6} = \frac{4}{6} = \frac{2}{3}$$

Do I Understand?



Subtract. Write the answer for problem 2 in simplest form.

1. $\$92.36 - \24.42

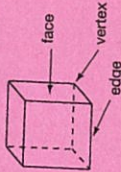
2. $2\frac{3}{5} - 1\frac{1}{2}$

ANSWERS: 1. \$67.94; 2. $1\frac{1}{10}$

Examples of Solid Figures

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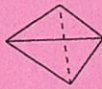
rectangular prism
6 faces
12 edges
8 vertices



triangular prism
5 faces
9 edges
6 vertices

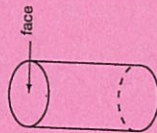


rectangular pyramid
5 faces
8 edges
5 vertices

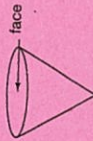


triangular pyramid
4 faces
6 edges
4 vertices

The solid figures that have curved surfaces are shown below.



cylinder
2 flat faces
1 curved surface
2 edges
0 vertices



cone
1 flat face
1 curved surface
1 edge
1 vertex



sphere
0 flat faces
1 curved surface
0 edges
0 vertices

Do I Understand?



1. With which other solid figure can a cube be classified?

ANSWERS: 1. rectangular prism

