

## Summer Math 2023 Packet: Grade 7 Math

Dear Students and Parents,

This summer, we encourage you to continue to practice your mathematics at home. Practicing math skills over the summer can keep the brain's pathways for computation and mathematical vocabulary strong.

Please make sure to follow the suggested directions for the best outcomes:

1. **Do NOT use a calculator (unless specified).** Take time to "grow your brain" and practice your math facts.
2. **Show all work!** An important aspect of mathematics is being able to communicate the process you use to arrive at your answer. It also provides an opportunity to review your thinking when making corrections to your work.
3. **Be neat and organized!** Part of success in math is being able to organize your work and keep track of your calculations and steps. Use all the paper you need to neatly show your work.
4. **Box your final answers** (another organizational strategy).
5. **Do not rush!** Take advantage of the summer pace and see if you digest more of what you're working on.
6. **If you are stuck on a problem, read the example problems provided at the beginning of each exercise.** If you are still stuck, check out one of the math websites listed below.
7. **Check your work!** If you got an incorrect answer, go back and try to figure out your error. Correcting your work and figuring out where you went wrong is monumental in the learning process.

Resources:

For help with a topic: [www.purplemath.com](http://www.purplemath.com) and select 6th grade on the left hand column, then select the topic from the top.

For Math Fact Practice: [www.aplusmath.com](http://www.aplusmath.com) and select flash cards. You can switch the operation and difficulty each time.

Another resource for help relearning a topic: [www.khanacademy.org](http://www.khanacademy.org)

Math Learning Games: [www.funbrain.com](http://www.funbrain.com)

Another suggestion: If you or your child has a cellular phone, there are free math apps that you can play on and build math skills. There are many out there. Try one out!

# Summer Math Packet

## Incoming 7<sup>th</sup> Grade Students

*Directions:* Please complete the following examples without the use of a calculator. You may want to use a separate sheet of scrap paper. Use the attached answer key to check your work.

1. The ratio of boys to girls in a class is 2:3.

What fraction of the students are girls?

If there are 80 boys, how many students are there altogether?

2. For every five blue marbles, there are 2 green marbles. Write this ratio in three different ways.
3. List all of the factors of 16.
4. List all of the factors of 36.
5. Find the prime factorization of 50.
6. Find the prime factorization of 72.
7. What is the greatest common factor of 24 and 48?



14. Find each sum:

$$\frac{2}{3} + \frac{1}{9}$$

$$\frac{3}{4} + 1\frac{1}{2}$$

$$2\frac{1}{6} + 3\frac{7}{9}$$

$$3.451 + 6.235$$

$$0.34 + 8.2$$

$$5.982 + 4.39$$

15. Find each difference:

$$\frac{7}{10} - \frac{2}{5}$$

$$3\frac{6}{9} - \frac{1}{3}$$

$$7\frac{1}{6} - 2\frac{3}{4}$$

$$3.23 - 1.12$$

$$9.72 - 6.5$$

$$6.4 - 3.71$$

16. Find each product.

$$\frac{2}{3} \times \frac{1}{4}$$

$$\frac{3}{5} \times 10$$

$$2\frac{1}{3} \times \frac{3}{4}$$

$$3\frac{2}{5} \times 1\frac{1}{3}$$

$$4.2 \times 3.6$$

$$0.33 \times 4.1$$

17. Find each quotient

$$\frac{1}{6} \div \frac{2}{3}$$

$$2\frac{1}{5} \div \frac{3}{4}$$

$$1\frac{1}{4} \div 2\frac{2}{5}$$

$$45.6 \div 2$$

$$40.8 \div 12$$

$$504 \div 21$$

18. 3 people share  $\frac{1}{2}$  pound of chocolate. How much of a pound of chocolate does each person get?

19. Julie has  $\frac{1}{2}$  yard of fabric to make book covers. Each book is made from  $\frac{1}{8}$  yard of fabric. How many book covers can Julie make?

20. How many  $\frac{3}{4}$ -cup servings are in  $\frac{2}{3}$  of a cup of yogurt?

21. Plot each point on the number line below:

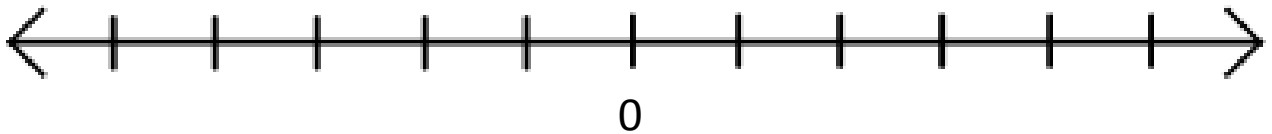
3

-3

-5

2.5

-0.5



22. Use an integer to represent 15 feet below sea level.

23. Use an integer to represent 15 feet above sea level.

24. The record low temperature for Maine is  $-48^{\circ}\text{F}$ . The record low temperature for Massachusetts is  $-35^{\circ}\text{F}$ . Which state had the coldest record low temperature? Show or explain how you found your answer.

25. Which number has the greatest absolute value?

13, -24, -35, 26

26. A whale is swimming at a depth of -35 feet. A submarine is located at a depth of -50 feet. Sea level is 0 feet. Which is deeper, the whale or the submarine? Show or explain how you know your answer is correct.

27. Find the value of each of the following expressions:

$$2 + 3 \times 4$$

$$5 \times 6 + 2 \times 3$$

$$8 - 6 + 2$$

$$3^2 + 4 \times 5$$

$$8 - 2^3 + 4^2$$

$$7^2 - 24 \div 3 + 25$$

28. Write an algebraic expression for each of the following:

7 less than a number

Twice a number

3 more than  $h$

The product of 8 and a number

The sum of  $m$  and 5

The difference of 9 and a number

The quotient of  $p$  and 3

2 more than three times a number

6 less than the quotient of 2 and  $w$

3 times the sum of a number and 6

29. Evaluate each of the following expressions when  $x = 2$  and  $y = 4$

$$4x$$

$$2x - 1$$

$$3y$$

$$6 - y$$

$$3x + 2y$$



30. Evaluate the following expression when  $a = 3$ ,  $b = 2$ , and  $c = 1$

$$\frac{ab-c}{5c}$$

31. Evaluate the following expression when  $n = \frac{1}{2}$

$$2(4n + 1) - 6n$$

32. The expression  $c + 0.08c$  can be used to find the total cost of an item with 8% sales tax, where  $c$  is the pre-tax cost of the item. Use the expression to find the total cost of an item that cost \$30.

33. The perimeter of a parallelogram is found using the formula  $p = 2l + 2w$ . What is the perimeter of a rectangular picture frame with dimensions of 6.5 inches by 4.5 inches?

34. Stephanie has six more than three as many crayons as Beth. Write an algebraic expression to represent the number of crayons that Stephanie has.

35. An amusement park charges \$8 to enter and \$0.75 per ticket. Write an algebraic expression to represent the total amount spent.

36. Ryan has a summer job doing yard work. He is paid \$20 per hour and a \$8 bonus when he completes the yard. He was paid \$88 for completing one yard. Write an equation to represent how long it took him to complete the yard work.

37. Describe a problem situation that can be solved using the equation  $8c + 2 = 26$ ; where  $c$  represents the cost of an item

38. John earned \$7.00 mowing the lawn on Saturday. He earned more money on Sunday. Write an expression that shows the amount of money John has earned.

39. Are the expressions equivalent? How do you know?

$$4p + 12 \quad 4(p+3) \quad 3p + 12 + p \quad 7 + 2p + p + 5 + p$$

40. Jennifer gets paid \$20 for babysitting. She spends \$1.99 on a candy bar and \$6.50 on lunch. Write and solve an equation to show how much money Jennifer has left.

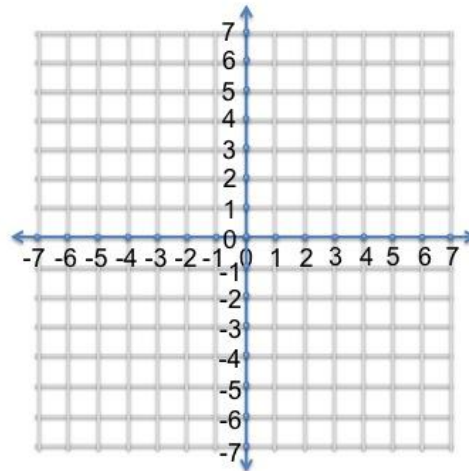
41. Trevor had 48 marbles.  $\frac{3}{4}$  of them are blue. How many blue marbles does Trevor have?

42. Use the following coordinates to draw polygons on the coordinate plane below.

A (3, -5)

B (2, 4)

C (-1, -1)



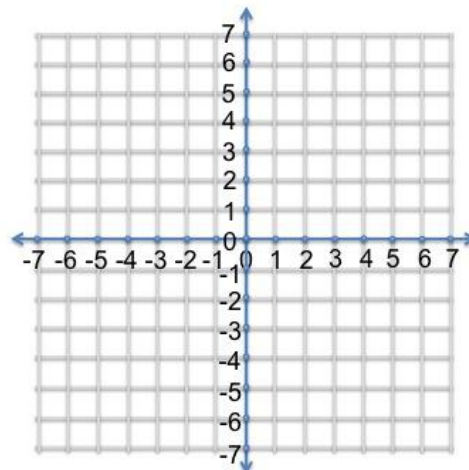
Name the figure: \_\_\_\_\_

A (0, 5)

B (-2, 0)

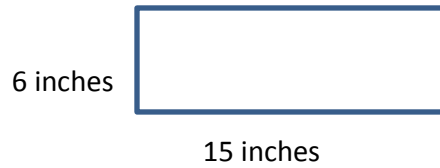
C (-1, -4)

D (2, 1)



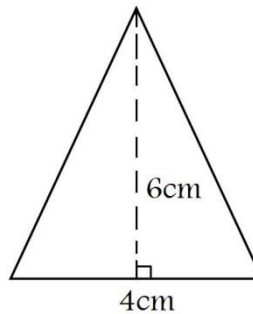
Name the figure: \_\_\_\_\_

46. Find the perimeter and the area of the rectangle below.

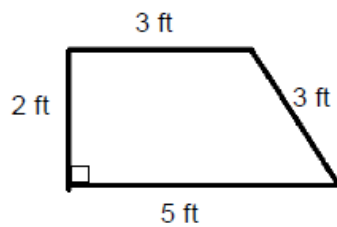


47. What is the area of triangle with base 7 yd. and height 11 yd?

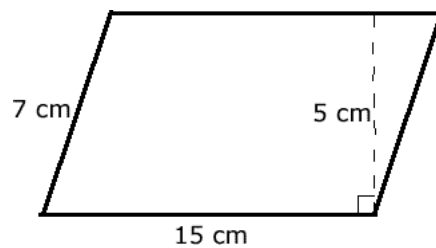
48. Find the area of the triangle below.



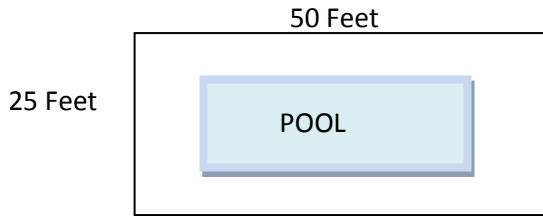
49. What is the area of the polygon below? Show or explain how you found your answer



50. What is the area of the polygon below? Show or explain how you found your answer.



51. Faith is tiling the patio around her pool. The area of the pool is 960 square feet. What is the area of the patio around the pool? Show or explain how you found your answer.



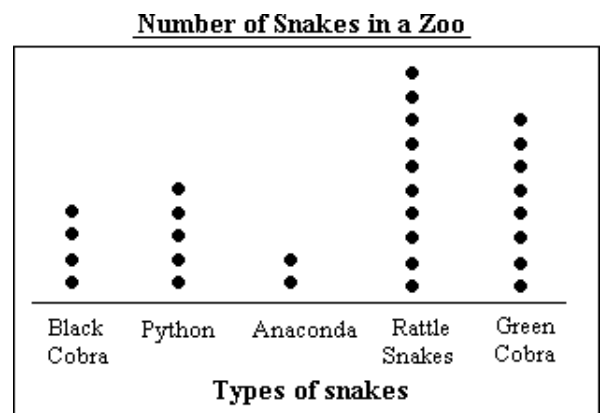
52. A toy store needs boxes that measure 10 centimeters long by 7 centimeters wide by 6 centimeters tall.  
 a. Draw a net below for a box with these dimensions.

b. What is the surface area of each box?

53. Use the dot plot below to answer the questions.

a. What is the total number of snakes at the zoo?

b. What is the mean number of snakes?



54. Find the mean, median, mode, and range of the following: 3, 7, 2, 5, 2, 4, 6, 2, 4, 2, 6, 3, 4, 1, 5, 2, 2, 6

55.

<b>Math Test Scores</b>				
Below 60%	60%-69%	70%-79%	80%-89%	90%-100%
3	4	5	15	6

How many students scored 70% or better on the math test?

56.

<b>Age Group</b>	<b>No. of People</b>
45-50	2
51-55	1
56-60	2
61-65	4
66-70	2
71-75	2

What is the number of people in age group 51-65 in the given table?

57. Maya has \$3.11, Samantha has \$8.81, and Tommy has \$7.95. What's a good estimate of the total amount of money they have together?

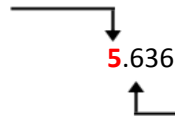
58. Heather reads 11.3 pages of her book each day. Estimate the total number of pages she reads in 30 days.

59. There are 70 boys in the gym. Thirty-nine of them are wearing khaki shorts. What fraction is a good estimate of how many boys are wearing khaki shorts?

60. It costs \$1.50 per pound to ship a package. Matt's package weighs between 7 and 8 pounds. Estimate the amount of money Matt will have to pay to ship his package.

# Rounding Decimals

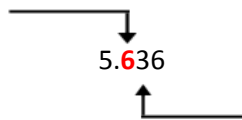
Round to the nearest whole number.



Since the digit to the right is 5 or greater, round up to 6.

5.636 rounded to the nearest whole number is **6**.

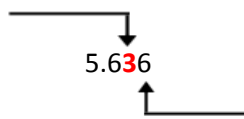
Round to the nearest tenth.



Since the next digit to the right is less than 5, round down to 5.6.

5.636 rounded to the nearest tenth is **5.6**.

Round to the nearest hundredth.



Since the next digit to the right is 5 or greater, round up to 5.64.

5.636 rounded to the nearest hundredth is **5.64**.

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What is 8.525 rounded to the nearest whole number? \_\_\_\_\_

What is 8.525 rounded to the nearest tenth? \_\_\_\_\_

What is 8.525 rounded to the nearest hundredth? \_\_\_\_\_

What is 3.341 rounded to the nearest whole number? \_\_\_\_\_

What is 3.341 rounded to the nearest tenth? \_\_\_\_\_

What is 3.341 rounded to the nearest hundredth? \_\_\_\_\_

Circle the correct answer.

5.385 rounded to the nearest tenth is    5.3            5.4            5.5

4.62 rounded to the nearest whole number is    4.7            4            5

6.652 rounded to the nearest tenth is    6.5            6.6            6.7

4.106 rounded to the nearest hundredth is    4.10            4.11            4.12

## Rounding Decimals

Round the nearest whole number.

1.27 \_\_\_\_\_

4.109 \_\_\_\_\_

19.51 \_\_\_\_\_

5.9 \_\_\_\_\_

22.83 \_\_\_\_\_

11.362 \_\_\_\_\_

3.156 \_\_\_\_\_

8.011 \_\_\_\_\_

10.94 \_\_\_\_\_

31.7 \_\_\_\_\_

0.506 \_\_\_\_\_

2.251 \_\_\_\_\_

19.82 \_\_\_\_\_

21.709 \_\_\_\_\_

5.5 \_\_\_\_\_

15.702 \_\_\_\_\_

6.341 \_\_\_\_\_

53.3 \_\_\_\_\_

Round the nearest tenth.

1.27 \_\_\_\_\_

4.408 \_\_\_\_\_

11.509 \_\_\_\_\_

9.538 \_\_\_\_\_

12.823 \_\_\_\_\_

0.222 \_\_\_\_\_

6.141 \_\_\_\_\_

8.011 \_\_\_\_\_

7.094 \_\_\_\_\_

28.127 \_\_\_\_\_

4.506 \_\_\_\_\_

2.609 \_\_\_\_\_

19.82 \_\_\_\_\_

9.634 \_\_\_\_\_

35.515 \_\_\_\_\_

15.702 \_\_\_\_\_

16.230 \_\_\_\_\_

17.091 \_\_\_\_\_

Round the nearest hundredth.

7.1091 \_\_\_\_\_

3.655 \_\_\_\_\_

2.073 \_\_\_\_\_

6.941 \_\_\_\_\_

12.107 \_\_\_\_\_

2.3845 \_\_\_\_\_

15.039 \_\_\_\_\_

9.127 \_\_\_\_\_

11.2773 \_\_\_\_\_

5.285 \_\_\_\_\_

9.789 \_\_\_\_\_

0.007 \_\_\_\_\_

3.362 \_\_\_\_\_

3.215 \_\_\_\_\_

7.005 \_\_\_\_\_

16.336 \_\_\_\_\_

4.218 \_\_\_\_\_

33.333 \_\_\_\_\_