

Student Name \_\_\_\_\_

**Hartsville Middle School**  
**Rising 8<sup>th</sup> Grade GEOMETRY Summer Work**  
**OPTIONAL FOR GEOMETRY CLASSES**

**DUE ON FRIDAY, JULY 31, 2026**

You can find a link to make a copy of the summer math work on the HMS webpage.

Dear Student,

You now have the opportunity to earn extra credit for the first quarter in your math class and have your name entered to win outstanding prizes!

Anyone who completes the summer math assignment & turns it in by July 31, 2026 will

- be entered in a drawing to win
  - a free yearbook!
  - a trip to Dave and Buster's!
  - a free ice cream once a week for the entire first semester!

**GEOMETRY WORK REQUIREMENTS:**

- Refer to your 7th grade math notebook or the internet for assistance but complete your **OWN** work.
- All sections, excluding the "Concepts of Circles" section, should be completed **without** a calculator. Therefore, it is important to only use the calculator as a means to check over your answer, if used at all.
- Do not wait until the last minute to complete your assignment.
- Write neatly and make sure all of your work is organized.
  - **NUMBER YOUR WORK ACCORDING TO HOW IT IS WRITTEN IN THIS PACKET.**
- Show your work (step-by-step solutions) for the **bolded** problems, and circle or box-in your final answer.
- Simplify fractions as proper or improper fractions, and round all decimal answers to the nearest hundredth.

Links to helpful websites and the summer math prep-work are provided on Mrs. Byrd's webpage:

<https://sites.google.com/darlington.k12.sc.us/meredithbyrd/practice?authuser=0>

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## Rational Numbers

**Directions:** Evaluate the following problems.

1)  $-3.54 + (-2.596)$

2)  $-16.462 + 9.423$

3)  $12.346 - 31.05$

4)  $32.161 - 32.168$

5)  $3.2 \times 4.6$

6)  $5.12 (3.7)$

7)  $8 \div 64$

8)  $12/3$

9)  $1/2 + 2/3$

10)  $\frac{2}{5} * \frac{10}{3}$

11)  $3/7 \div 3/8$

12)  $(\frac{12}{5}) \div (-\frac{9}{3})$

**Directions:** Write the correct inequality ( $<$ ,  $>$ ,  $\leq$ ,  $\geq$ , or  $=$ ) for the problems below.

13)  $3.24$  \_\_\_\_\_  $3.241$

14)  $3/7$  \_\_\_\_\_  $5/13$

15)  $\pi$  \_\_\_\_\_  $\sqrt{9}$

16)  $\frac{18}{3}$  \_\_\_\_\_  $\sqrt[2]{36}$

### *Translating (Converting) between Fractions, Decimals, and Percents*

**Directions:** Complete the table with the appropriate fraction, decimal, or percent.

Problem #	Fraction	Decimal	Percent
17)	$\frac{27}{100}$		
18)			3.2%
19)		1.3	
20)	$3/2$		
21)		.25	
22)			400%

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## RATIOS

### *Unit Rates*

23) Josh purchased 4 pizzas for \$52. How much did he pay per pizza?

24) Katherine sent a total of 651 text messages within a week. Assuming she sent the same number of texts each day, how many texts did she send per day?

### *Proportional Relationships*

25) The average person can blink 105 times in 7 seven minutes. Based on this information, how many times can the average person blink in 21 minutes?

26) At Best Buy, 48 television sets were sold in April. The manager wants to encourage the sales team to sell more TVs by giving all the sales team members a bonus if the number of TVs sold increases by 30% in May. How many TVs must the sales team sell in May to receive the bonus? Justify your solution.

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## LINEAR EXPRESSIONS & EQUATIONS

### *Distribute Expressions*

**Directions:** Simplify the following expressions.

27)  $2(3x + 4)$

28)  $-4(6y - 3)$

29)  $-3(-2a - 7)$

30)  $-(-4b + 12)$

### *Solving 2-Step Equations*

**Directions:** Solve the following equations.

31)  $3x - 10 = 8$

32)  $\frac{1}{2}x + \frac{3}{2} = 11$

33)  $12 = 2x - 4$

34)  $23 = 9 - 3x$

35)  $-4 = 6 - x$

### *Solving 2-Step Equations w/Distributive Property*

**Directions:** Solve the following equations.

36)  $4 = \frac{1}{2}(2 - x)$

37)  $12 = -2(x - 7)$

38) Mr. Lee's class is going to the state fair. The trip costs \$52. Included in that price is \$11 for a concert ticket and the cost of 2 passes, one for rides and one for game booths. Each of the passes cost the same price. Determine the price for one pass and explain your reasoning.

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## LINEAR INEQUALITIES

### *Solving & Graphing 2-Step Inequalities*

**Directions:** Solve the following inequalities and graph each solution.

39)  $-7 \geq -3x - 2$

40)  $3(3t + 1) < -15$

41) Tiffany has at most \$60 to spend on clothes. She wants to buy a pair of jeans for \$22 and spend the rest on shirts. Each shirt costs \$8. Determine the number of shirts Tiffany can purchase. Justify your answer.

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## LAWS OF EXPONENTS

**Directions:** Simplify each problem.

*Product Rule*

42)  $t^3 \times t^9$

43)  $a^4 \times a$

44)  $3^4 \times 3^2$

45)  $2^3 \times 2$

*Quotient Rule*

46)  $\frac{x^7}{x^2}$

47)  $\frac{ab^7}{ab^4}$

48)  $\frac{7^7}{7^5}$

49)  $\frac{10^{10}}{10^{10}}$

*Power to a Power Rule & Basic Exponents Principles*

50)  $(s^3)^{10}$

51)  $-2^2$

52)  $(-2)^2$

53)  $(-2)^3$

*Zero Power Property*

54)  $xy^3z^0$

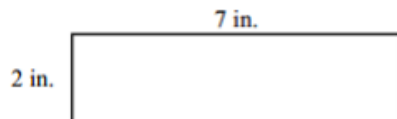
55)  $2.4^0$

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## SCALE FACTOR

56) Rectangle A has a width of 8 feet and a length of 12 feet. Rectangle B has a width of 2 feet and a length of 3 feet. If Rectangle A was reduced to make Rectangle B, what is the scale factor?

57) The rectangle below was increased by a scale factor of 2.5. What will be the perimeter and area of the new rectangle?



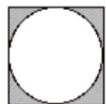
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## CIRCLES

*Concepts of Circles*

58) A circle has a radius of 3.2 inches. Find its circumference and perimeter. (You may find the exact answer in terms of  $\pi$  or the approximate value.)

59) In the picture below, the circle sits perfectly on the square. The length of one side of the square is 12 centimeters long. What is the measure of the radius of the circle? Explain your reasoning.



60) What is the length of the diameter of a circle that has a circumference of  $9\pi$ ?

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## ANGLE RELATIONSHIPS

*Vocabulary*

**Directions:** Define and sketch an example of each vocabulary term.

61) Supplementary Angles

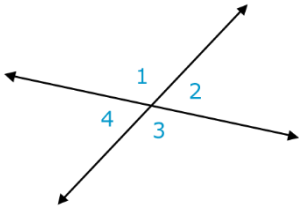
62) Complementary Angles

63) Vertical Angles

64) Adjacent Angles

*Angles Formed by Two Intersecting Lines*

In the figure below, two lines intersect to form  $\angle 1$ ,  $\angle 2$ ,  $\angle 3$ , and  $\angle 4$ . Use the figure to answer the following questions:



65) If  $\angle 1$  is  $47^\circ$ , what is the measure of  $\angle 3$ ?

66) If  $\angle 1$  is  $47^\circ$ , what is the measure of  $\angle 2$ ?

67) List the 2 angles that add to make up a supplementary angle?

68) List the 2 angles that add to make up a complementary angle?