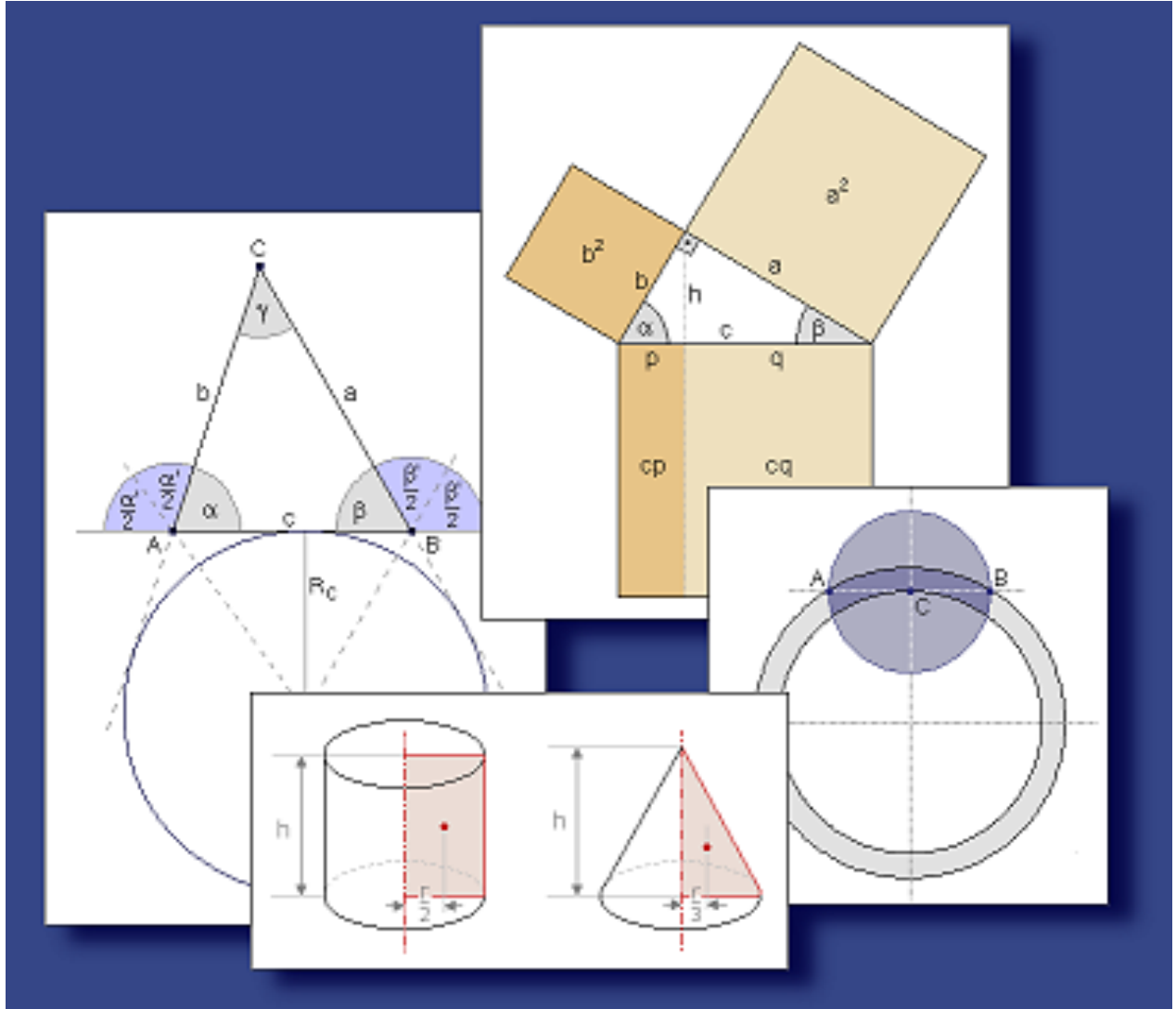


Rosa Parks Middle School Honors Geometry



Summer Math Packet Due 1st Day of School

Student Name: _____

The Rosa Parks Math Department is requesting that students spend time over the summer reviewing math concepts. In addition to helping them retain their mathematical knowledge and gains made this year, this will also help prepare them for success upon their return to school in the fall. Students will need to complete a math packet for the course they are entering next year.

Students who complete the summer math booklet will be able to:

- Increase retention of math concepts,
- Work toward closing the gap in student performance,
- Apply math concepts to performance tasks, and

This packet is due on the first day we return from summer, August 31, with a deadline of the Friday, September 4.

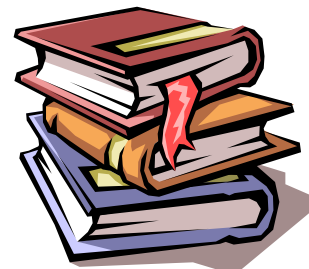
There are many excellent summer programs and websites also available. In addition to the math packet, students will have access to a site that is designed to help all MCPS middle grade students maintain their math skills during the summer months. These online resources will provide students with multiple opportunities to review concepts from this past school year. As students access the website they will select the page that matches the mathematics course they will be enrolling in for the upcoming school year (2020-2021). The course page will then provide links to several different units of study. Each unit will contain multiple online resources, such as video tutorials, games, and many more challenging tasks. Please make sure that your child is signed onto their google account prior to logging into the website otherwise students may not be able to easily access some of the resources. The online tools can be found on the following website:

<http://tinyurl.com/MCPSMathSummer>

Student Responsibilities

Students will be able to improve their own math performance by:

- Completing the summer math booklet
- Reviewing math skills throughout the summer, and
- **Returning the math booklet to next year's math teacher.**



Parent Responsibilities

Parents will be able to promote student success in math by:

- Monitoring student completion of the summer math booklet,
- Encouraging student use of math concepts in summer activities, and
- **Ensuring the return of the math booklet to school at the beginning of next school year.**

If you have any questions, you may contact the math resource teacher, Aimee Conway at

Aimee_R_Conway@mcpsmd.org

Thank you for your support and have a wonderful summer! We look forward to seeing you in September!

Table of Contents

Page	Objective	Suggested Completion Date
4	Fractions	June 22nd
5	Order of Operations	July 29th
6	Proportions	July 6th
7	Exponents and	July 13th
8	Solving Equations	July 20th
9	Solving Equations II	July 27th
10	Systems of Equations	August 3rd
11	Factoring Quadratic Equations	August 10th
12	Solving Quadratic Equations	August 17th
13	Pythagorean Theorem	August 24th
14	Math Puzzles	August 29 th

Do Not use a calculator! Show work that you are not able to fit on the page using additional sheets of paper and attach.

Fractions

Simplify the following fractions:

1. $\frac{8}{24} =$

2. $\frac{21}{14} =$

3. $\frac{5}{20} =$

Write the following mixed numbers as improper fractions:

4. $2\frac{1}{7} =$

5. $-5\frac{7}{8} =$

6. $6\frac{3}{7} =$

Perform the indicated operation, and simplify if necessary:

7. $\frac{5}{4} + \frac{3}{4} =$

8. $\frac{7}{8} - \frac{1}{2} =$

9. $\frac{6}{7} + \frac{3}{2} =$

10. $\frac{9}{2} + \frac{7}{5} =$

11. $\frac{15}{8} - \frac{12}{5} =$

12. $-\frac{3}{5} - \frac{2}{7} =$

13. $\frac{2}{3} \cdot \frac{5}{8} =$

14. $-\frac{5}{3} \cdot \frac{2}{5} =$

15. $\frac{4}{7} \cdot \frac{8}{3} =$

16. $\frac{1}{3} \div \frac{5}{2} =$

17. $\frac{1}{9} \div \frac{7}{8} =$

18. $-\frac{4}{5} \div \frac{1}{6} =$

19. $6 \cdot \frac{4}{5} =$

20. $15 \div \frac{3}{8} =$

21. $\frac{2}{7} \cdot 14 =$

Order of Operations

Evaluate each expression:

1. $3 + 7 * 5 - 2$

2. $24 - 2^2 * 7 - 5$

3. $2(5 + 3) - 5 * 4$

4. $-3(12 - 7) + 3^3$

5. $4[5(9 + 3) - 3(4 - 2)]$

6. $49 - (5 + 2)^2 + 14$

7. $\frac{1}{3}(2 + 4)^2$

8. $(7 - 9)^2 \div (5 + 4)^2$

9. $14 - (4^3 \div 16) * 5$

10. $(3 - 5)^3 \div 2(4 * 3)$

Proportions

Solve each proportion for the missing value:

1. $\frac{2}{3} = \frac{x}{12}$

2. $\frac{5}{y} = \frac{10}{14}$

3. $\frac{15}{5} = \frac{9}{n}$

4. $\frac{x+2}{2} = \frac{4}{3}$

5. $\frac{2}{0.4} = \frac{15}{t}$

6. $\frac{.21}{2} = \frac{4}{a}$

Solve for each problem below by using proportions.

7. Sue was paid \$384 for working 32 hours. How many hours will she have to work to earn \$672?
8. Tommy drove 238 miles in 5 hours. How long will it take him to travel the next 72 miles, if he continues at the same speed? (Give your answer in minutes)
9. Matt paid \$33.41 for 13 gallons of gasoline. How many gallons can he buy if he only has \$14?

Exponents

Simplify the following expressions:

1. $x^3 \cdot x^2$

2. $(x^4)^2$

3. $x^5 \div x^2$

4. $\frac{x^3 y^5}{x^4 y^2}$

5. $a^{-5} \cdot b^2$

6. $(2x^3)^2$

7. $\frac{15a^4 b^2 c^3}{5ac^5}$

8. $\left(\frac{2h^3}{3}\right)^2$

9. $t^4 \cdot t^2 \div t^7$

Solving Equations

Solve the following equations.

1. $7x - 17 = 60$

2. $5y - 13 = 37$

3. $\frac{r + 8}{-3} = -2$

4. $3(x+2) = 18$

5. $-2 + 10x = 8x - 1$

6. $2(a - 3) + 5 = 3(a - 1)$

7. $3 + \frac{2}{5}y = 11 - \frac{2}{5}y$

8. $2[x + 3(x - 1)] = 18$

9. $1.03t - 4 = -2.15t + 8.72$

10. $-3(x + 5) = 8x + 18$

11. One half of a number increased by 16 is four less than two thirds of the number. Find the number.

12. Two times the sum of a number and eight is equal to the difference of ten and that number. Find the number.

Solving Equations II

Solve the following equations.

1. $-4y + 3y - 8 = 24$

2. $\frac{m}{-5} + 6 = 4$

3. $-4r + 5 - 6r = -32$

4. $\frac{x}{-3} + (-7) = 6$

5. $6x + (-3) = -12$

6. $\frac{y}{-2} + (-4) = 8$

7. $9 - 5(4-3) = -16 + \frac{x}{3}$

8. $6y - 14 - 3y = 8(7 - (-2))$

9. $4c + 5c - 8c = 13 + 6$

10. $3(7 + x) = 5(7 - (-4))$

Systems of Equations

Find the value of x , and y that satisfy each system of equations below.

$$1. \begin{cases} y = 4x \\ 3x + 2y = 44 \end{cases}$$

$$2. \begin{cases} 3x - 2y = 12 \\ x + 2y = 6 \end{cases}$$

$$3. \begin{cases} x = y + 2 \\ 5x + 3y = 18 \end{cases}$$

$$4. \begin{cases} 2x + y = 5 \\ x - y = 1 \end{cases}$$

$$5. \begin{cases} 2x = y + 3 \\ 4x - 2y = 12 \end{cases}$$

$$6. \begin{cases} y = 3x - 8 \\ y = 4 - x \end{cases}$$

7. The sum of three times a number and a second number is five. Two times the first number added to the second number is 10. Find the two numbers.

Factoring Quadratic Equations

Factor the following expressions.

1. $x^2 + 9x + 20$

2. $x^2 - 3x - 28$

3. $x^2 + 12x + 20$

4. $x^2 + 4x - 32$

5. $x^2 - 64$

6. $4x^2 - 25$

7. $2x^2 + 5x + 3$

8. $3x^2 - 3x - 6$

9. $8x^2 - 2x - 10$

10. $4x^2 + 8x + 3$

Solving Quadratic Equations

Solve the following quadratic equations by factoring.

1. $x^2 + 7x + 12 = 0$

2. $x^2 - 9x - 36 = 0$

3. $5x^2 = 5x + 60$

4. $x^2 - 81 = 0$

5. $7x^2 + 42x = 0$

6. $3x^2 - 3x = 3(x + 15)$

Solve the following equations by using the quadratic equation.

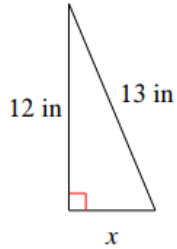
7. $2x^2 + 6x = 5$

8. $8x + 4 = 2x^2$

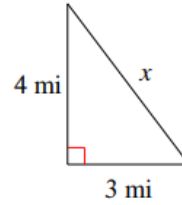
Pythagorean Theorem
****CALCULATORS ALLOWED FOR THIS PAGE****

Find the missing side of each triangle. Round your answers to the nearest tenth if necessary.

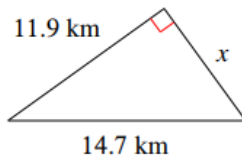
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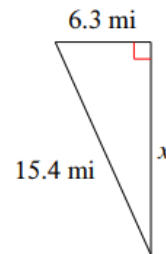
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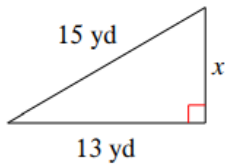
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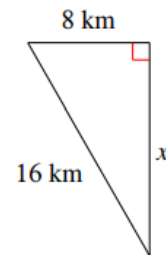
4)



5)



6)



State if the three side lengths form a right triangle.

7) 10cm, 49.5cm, 50.5cm

8) 9in, 12in, 15in

Math Puzzles

1. Divide 110 into two parts so that one will be 150 percent of the other. What are the 2 numbers?
2. Jennifer took a test that had 20 questions. The total grade was computed by awarding 10 points for each correct answer and deducting 5 points for each incorrect answer. Jennifer answered all 20 questions and received a score of 125. How many wrong answers did she have?
3. You have 55 coins totaling \$10.00. There are more nickels than pennies, more dimes than nickels, and more quarters than dimes. How many of each coin do you have?
4. If 3 salesmen can sell three stoves in 7 minutes, how many stoves can six salesmen sell in seventy minutes?
5. What is the number that is 5 more than the number which is one-fifth of one-fifth of one-half of 1050?