

Full Name: _____

Letter Grade / %Grade

Quarter 3: _____

Quarter 4: _____

7th Grade Mathematics

Summer Packet

Directions:

1. This packet reviews the foundational skills you will need for success in 7th grade mathematics.
2. Complete this packet and be prepared to turn it in on the first day of class.
3. When solving multi-step equations and inequalities, all steps of logical reasoning should be shown, and your final answer must be boxed. See the following

example: Evaluate the expression $3x + 2y$
When $x = 2$ and $y = 4$

$$\begin{array}{l} 3x + 2y \\ 3(2) + 2(4) \\ 6 + 8 \\ \boxed{14} \end{array}$$

4. Feel free to use additional paper when needed. Label problems when completed on additional paper with the page and problem number. Submit any additional paper used with your packet.
5. You are encouraged to work with peers and use additional resources (for example, MagicSchool AI) to complete your work. All work, however, should be completed in your own hand.
6. Always write your first and last name on submitted work.
7. If you have any questions, you are welcome to reach out to a Mountainside mathematics teacher at: ltimms@susd.org or smiller@susd.org. Please plan to allow a few days for a response.
8. Have a great summer and we look forward to working with you in 7th grade mathematics.

Write a Ratio - Word Problems

1. There are 8 apples and 6 oranges in a basket. Write the ratio of apples to oranges.
2. A class has 12 boys and 18 girls. Write the ratio of girls to total students.
3. If a recipe uses 2 cups of sugar for every 5 cups of flour, what is the ratio of sugar to flour?
4. In a bag, there are 15 red marbles, 10 blue marbles, and 5 green marbles. Write the ratio of blue marbles to green marbles.
5. Sarah read 9 books in June and 12 books in July. Write the ratio of books read in June to books read in July.

Unit Rates Practice

1. A car travels 180 miles in 3 hours. What is the unit rate in miles per hour?
 - a. 45miles per hour
 - b. 60miles per hour
 - c. 90miles per hour
 - d. 30miles per hour

2. Sarah earns 48dollars for 6 hours of work. What is her hourly rate?
 - a. 6dollars per hour
 - b. 8dollars per hour
 - c. 12dollars per hour
 - d. 7dollars per hour

3. A recipe uses 4 cups of flour to make 8 muffins. How many cups of flour are needed per muffin?
- a. 4 cups per muffin
 - b. 1 cup per muffin
 - c. 0.5 cups per muffin
 - d. 2 cups per muffin
4. A runner completes 10 kilometers in 50 minutes. What is the unit rate in kilometers per minute?
- a. 0.5 kilometers per minute
 - b. 5 kilometers per minute
 - c. 2 kilometers per minute
 - d. 0.2 kilometers per minute
5. A store sells 5 apples for 3 dollars. What is the cost per apple?
- a. 0.6 dollars per apple
 - b. 2 dollars per apple
 - c. 1.5 dollars per apple
 - d. 0.5 dollars per apple

6. If a printer prints 120 pages in 8 minutes, how many pages does it print per minute?
- a. 15pages per minute
 - b. 10pages per minute
 - c. 20pages per minute
 - d. 12pages per minute
7. A cyclist rides 24 miles in 2 hours. What is the speed in miles per hour?
- a. 22miles per hour
 - b. 12miles per hour
 - c. 14miles per hour
 - d. 10miles per hour
8. A machine makes 300 parts in 5 hours. What is the unit rate in parts per hour?
- a. 30parts per hour
 - b. 75parts per hour
 - c. 50parts per hour
 - d. 60parts per hour

Ratio Tables

1. A recipe uses 2 cups of sugar for every 3 cups of flour.
Complete the ratio table for sugar to flour: 2:3, 4:__, 6:__, 8:__.
2. If 5 apples cost 10 dollars, use a ratio table to find out how much 15 apples would cost at the same rate.
3. A ratio table shows that 7 pencils cost 14 dollars. What is the cost for 1 pencil?
4. Complete the ratio table for the number of red to blue marbles: 1:4, 2:__, 3:__, 5:__.
5. Explain how you could use a ratio table to solve the problem:
If 4 notebooks cost 12 dollars, how much do 10 notebooks cost?

Convert Between Percents, Fractions, and Decimals

1. Write 45% as a fraction in simplest form.
2. Convert the decimal 0.25 to a percent.
3. Express $\frac{3}{5}$ as a decimal.
4. Change 82% to a decimal.
5. Write the decimal 0.4 as a fraction and as a percent.

Convert Between Customary and Metric Systems

1. If a water bottle holds 2 liters, about how many quarts is that? (Use the fact that 1 liter is about 1.06 quarts.)
2. A runner completed a race of 5 kilometers. About how many miles did the runner complete? (Use the fact that 1 mile is about 1.61 kilometers.)
3. Convert 12 inches to centimeters. (Use the fact that 1 inch is about 2.54 centimeters.)
4. A recipe calls for 500 grams of flour. About how many ounces is this? (Use the fact that 1 ounce is about 28.35 grams.)
5. If a swimming pool holds 10,000 gallons of water, about how many liters is that? (Use the fact that 1 gallon is about 3.785 liters.)

Divide Fractions and Mixed Numbers

1. What is the value of $\frac{3}{4} \div \frac{1}{2}$?
2. Solve: $2\frac{1}{3} \div \frac{2}{5}$. Write your answer as a mixed number.
3. If you have $\frac{5}{6}$ of a pizza and you want to share it equally among $\frac{1}{4}$ of a person, how much pizza does each person get?
4. Divide: $\frac{7}{8} \div 2$. Simplify your answer.
5. A recipe needs $1\frac{1}{2}$ cups of flour. If you divide this amount equally into $\frac{3}{4}$ cup portions, how many portions do you get?

Integer Inequalities with Absolute Values

1. Solve the inequality $|x| < 3$. List all integer solutions.
2. Determine if $x = 5$ is a solution to the inequality $|x - 2| \leq 3$.
Explain your reasoning.
3. Write an inequality involving absolute value that represents all integers more than 4 units away from 0.
4. Find all integer values of x that satisfy $|x + 1| \geq 2$.
5. If $|2x| < 6$, what are all possible integer values for x ?

Evaluate Multi-Variable Expressions

1. Evaluate the expression $3x + 2y$ when $x = 2$ and $y = 4$.
2. If $a = 5$, $b = 3$, and $c = 2$, find the value of $a - b + c$.
3. Calculate $2m^2 - n$ when $m = 3$ and $n = 4$.
4. Find the value of $xy + yz$ if $x = 1$, $y = 6$, and $z = 2$.
5. Evaluate $5p - 4q + r$ for $p = 2$, $q = 1$, and $r = 7$.