

# 2020 Summer Math Packet for Incoming Math 7 and Math 7 Accelerated Students

The math faculty at Shepaug Valley School would like to welcome you to 2020 - 2021 school year! We are looking forward to helping you achieve your greatest potential. We hope a quality education is one thing you will value.

We have developed the attached review packet to help you prepare for the Grade 7 math class you will be taking this fall. This packet includes material that students are expected to understand before beginning the 7th grade curriculum. The topics covered by the packet are the foundational skills necessary to be successful in Grade 7 math. The completed packet will be collected by your teacher on the first day of school.

Students may use any resources available to them to complete this packet. Helpful websites include:

[www.purplemath.com](http://www.purplemath.com)

[www.math.com](http://www.math.com)

[www.khanacademy.com](http://www.khanacademy.com)

Please spend the time needed to do a quality job on this packet. Show and organize your work for each problem. Write down your calculations and show all of your work!

Enjoy your summer vacation and keep your education moving forward during this break.

Name: \_\_\_\_\_

## Summer 2020 Math Packet for Incoming Math 7 and Math 7 Accelerated Students

### THE NUMBER SYSTEM

#### Skills and Practice

1. If you have \$42.70 at the beginning of summer and earn \$52.12 by mowing lawns and babysitting throughout the summer, how much do you have at the end of the summer?

2. Draw a number line and place the following rational numbers on it:

$-\frac{1}{2}$ ,  $\frac{3}{4}$ , 0.5,  $-\frac{1}{3}$ , -0.12

3. Mason and Laney ran laps to train for the long-distance running team. The ratio of the number of laps Mason ran to the number of laps Laney ran was 2 to 3.

a. If Mason ran 4 miles, how far did Laney run? Draw a tape diagram to demonstrate how you found the answer.

b. If Laney ran 930 meters, how far did Mason run? Draw a tape diagram to determine how you found the answer.

4. You brought \$14.70 to the movie theater and you spent \$13.28 on the ticket and a snack, how much money do you have left?

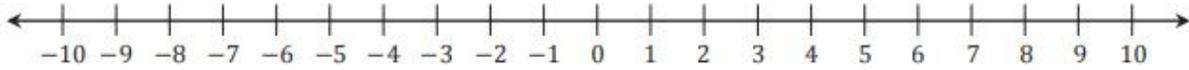
5. Margo freezes 8 cups of strawberries. If this is  $\frac{2}{3}$  of the total strawberries that she picked, how many cups of strawberries did Margo pick?

6. Find the product:

$$1.2 \times 0.015$$

Locate and label the opposites of the numbers on the number line.

- a. 9
- b. -2
- c. 4
- d. -7



8. Find the product:

$$4\frac{3}{4} \times 2\frac{1}{8}$$

### Problem Solving

9. The table below shows the overnight low temperatures for a four-day period. Write the temperatures in order from least to greatest.

Temperatures (°F)	
Monday	-7
Tuesday	8
Wednesday	19
Thursday	-10

10. Kanye and his two friends are **sharing** the cost of lunch. The total costs of the bill is \$15.27. If Kanye has \$20, how much will he have left after he pays his share?

11.

A box of mixed nuts packs weighs  $16\frac{1}{2}$  ounces. Each mixed nuts pack weights  $1\frac{3}{8}$  ounces. How mixed nuts snack packs are in the box?

12. A new sweater costs \$15.99. If the sweater is on sale for  $\frac{1}{4}$  off its price, about how much would you save?

## **RATIOS AND PROPORTIONAL RELATIONSHIPS**

### ***Skills and Practice***

1. A. Find the greatest common factor:

18 and 24 GCF = \_\_\_\_\_

B. Write an equivalent expression to  $4x + 20y$

2. Determine the least common multiple:

9 and 12 LCM = \_\_\_\_\_

3. Write the fraction as a decimal::

a)  $16/40$

b)  $50/60$

4. Write the decimal as a fraction in its simplest form:

0.48

### Problem Solving

5. Michelle wants to buy a cellular phone. The phone is 30% off the original price. If the original price of the phone is \$135, what is the amount Michelle will save?

6. The number of students in the drama club increased by a factor of 1.7 from the previous year. Write 1.7 as a percent.

7. The Camdens drove 116 miles on 5 gallons of gas. At this rate, how many miles can they drive on 7 gallons of gas?

8. The ratio of boys to girls on the bus is 2 to 3. If there are 18 boys on the bus, how many girls are on the bus?

## EXPRESSIONS AND EQUATIONS

### Skills and Practice

1. Evaluate the expression if  $x = 4$ .

$$-5 + 2x$$

2. Evaluate the expression if  $x = 4$ .

$$3(x - 2)$$

3. Solve the equation. Check your solution.

$$a + 1.56 = 4.1$$

4. Solve the equation. Check your solution.

$$9.4y = 28.2$$

## Problem Solving

5. Deon reads an average of 92 pages each week. Write an equation to represent the number of pages read after any number of weeks.

6. Justin is making 36 brownies for his sister's class. Using the table as a guide, how many eggs will Justin need to make 36 brownies?

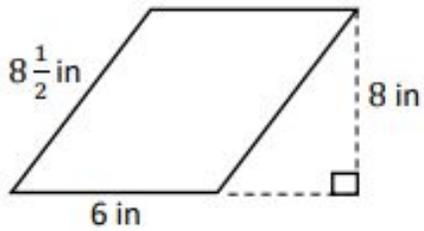
Eggs Needed for Brownies	
Number of Brownies	Number of Eggs
9	1
18	2

7. Six friends went to a basketball game. The price of admission per person was  $\$x$ . Four of the friends paid an extra \$5 each for a souvenir t-shirt. Write and simplify an expression that represents the total cost.

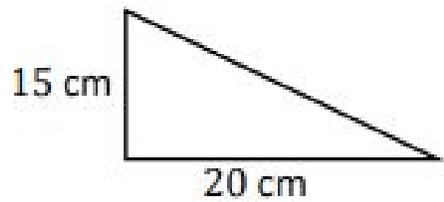
8. Krego earns \$2,456.75 every month. He also earns an extra \$4.75 every time he sells a new gym membership. Last month, Krego sold 32 new gym memberships. How much money did Krego earn last month?

## GEOMETRY Skills and Practice

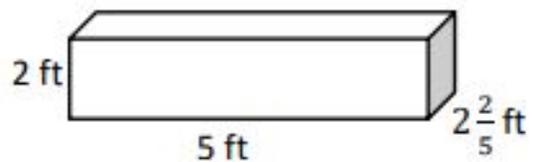
1. Find the area of the figure:



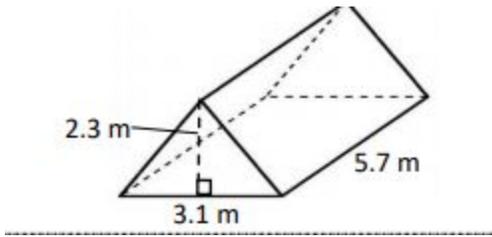
2. Find the area of the figure:



3. Find the volume of the prism. Round to the nearest tenth if necessary.



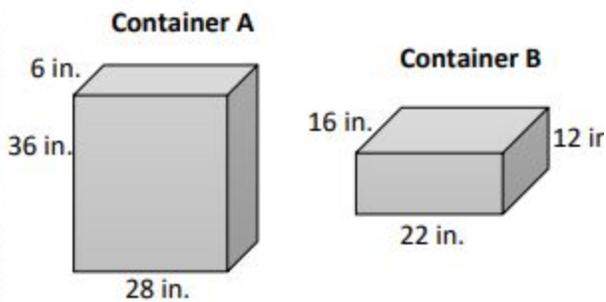
4. Find the volume of the prism. Round to the nearest tenth if necessary.



### Problem Solving

5. What is the height of a rectangular prism with a volume of 80 cubic feet and a base area of 25 square feet?

6. Find the surface area of each container. Which container has the greater surface area?



7. The charm for a bracelet is shaped like a triangular pyramid. All the faces are equilateral triangles with side lengths of 12 millimeters. The slant height is 10.1 millimeters. What is the surface area of the charm?

8. The surface area of a right triangular prism is 126 square inches. The base is a right triangle with a base height of 3 inches and a base length of 4 inches. The length of the third side of the base is 5 inches. Find the height of the prism.

## STATISTICS AND PROBABILITY Skills and Practice

1. Here are the data for the number of hours the sixth graders usually sleep when they do not have school the next day:

7 8 10 11 5 6 12 13 13 7 9 8 10 12 11 12 8 9 10 11 10 12 11 11 11 12 11 11 10 6

a) Make a dot plot of the number of hours slept when there is no school the next day.

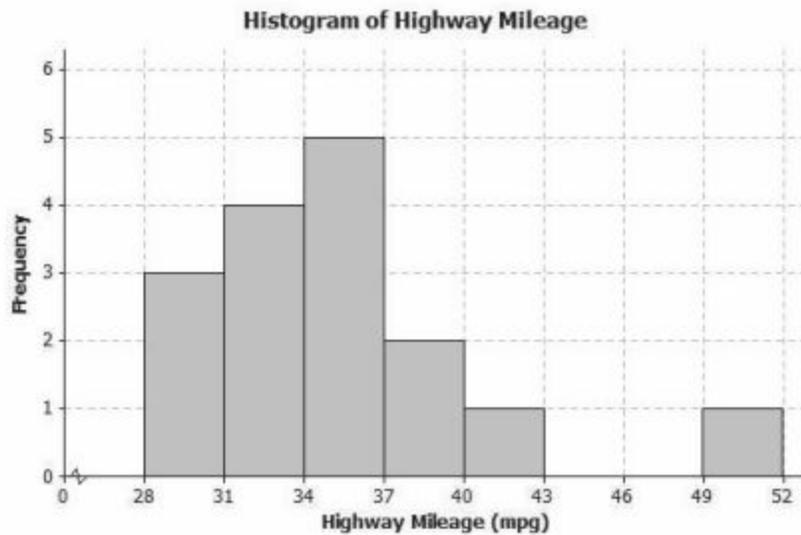
b) When there is no school the next day, what number of hours of sleep would you use to describe the center of the data?

c). What are the least and most number of hours slept with no school the next day reported in the survey?

2. Find the **mean, median, mode** and **range** for the following data set:

68, 69, 66, 75, 58, 72, 58, 75

The histogram below shows the highway miles per gallon of different compact cars.

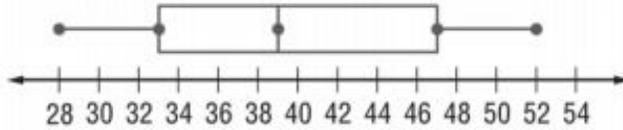


- Describe the shape of the histogram as approximately symmetric, skewed left, or skewed right.
- Draw a vertical line on the histogram to show where the typical number of miles per gallon for a compact car would be.
- What does the shape of the histogram tell you about miles per gallon for compact cars?

4. The table shows the length of different worms. Find and compare the median and mode of the data.

Worms Length (cm)			
15	19	12	30
16	11	18	19
14	14	12	14

5. The box plot below shows the number of cans collected by the student council. What is the median in the box plot?



6. Bradley washed 8 cars. He earned \$10, \$12, \$15, \$15, \$15, \$9 and \$10 for 7 cars. How much did he earn the eighth time if the mean of the data is \$12?

7. The results of a survey about the cost of earrings at a jewelry store in the table. What is the first quartile of the data?

Price of Earrings					
94	44	88	83	40	50
84	72	50	78	62	75
29	98	85	45	31	100