

Name_____

6th Grade Summer Review Packet

Date_____

Summer 6th-7th

Please show work. Use scrap paper as needed. No calculator. Answers at the back.

Number Theory

1. Evaluate.

a. $2 - 5(3 + 1) + 10^2$

b. $8 \div 2^3 - (-3) \cdot 7$

c. $\frac{12^2 - 4(6) + 5}{-13 - 7 + 5^2}$

2. Complete the chart below.

Prime Power Form	Expanded Form	Value
5^3		
	$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$	
		225
	$7 \cdot 7 \cdot y \cdot y \cdot y \cdot y$	
		$9n^5$
		448

3. List all of the factors of the value given.

a. 21

b. 45

c. 144

4. Solve each problem.

- a. Abe has 60 lollipops, 48 chocolate kisses, and 27 peanut butter cups. He wants to divide all of the candy up so that each bag has the same number of each kind of candy. What is the maximum number of bags of candy he can make?

- b. There are 32 seventh graders and 80 eighth graders in the gym. Shevon wants to put them in teams of mixed grades with the same number of members of a grade on each team. If she creates the greatest number of teams possible, how many seventh graders are on each team?

- c. Kyla and Ali are playing different games at an arcade. Kyla gets 12 tickets per win. Ali gets 30 tickets per win. At the end of the night, Kyla and Ali have the same number of tickets. What is the minimum number of games Kyla won?

- d. The traffic lights at three different road-crossings change after every 48 seconds, 72 seconds, and 108 seconds. If they all change at exactly 7:00 a.m., when is the next time they will change simultaneously?

Fractions and Decimals

5. Convert each fraction to a decimal. Write the exact value (do not round).

a. $\frac{2}{3}$

b. $\frac{2}{11}$

c. $\frac{20}{8}$

6. Convert each decimal to a proper fraction or mixed number.

a. 5.78

b. $2.\bar{3}$

c. 0.005

7. Scale the number line appropriately. Then graph the values given.

$\frac{3}{4}$, 0.7, $\frac{7}{9}$, 72%



8. Compare using less than, greater than, or equal to.

a. $\frac{12}{300}$ _____ 0.04

b. $\frac{23}{24}$ _____ $\frac{27}{28}$

c. $\frac{5}{7}$ _____ 0.71

d. 0.003 _____ $\frac{3}{100}$

9. Evaluate. Write answers as mixed numbers or proper fractions.

a. $2\frac{10}{11} + 7\frac{2}{3}$

d. $5\frac{1}{3} \cdot \frac{1}{4} - \frac{5}{18}$

b. $1\frac{2}{25} - \frac{3}{4}$

e. $3\frac{3}{10} \div \frac{9}{40}$

c. $(\frac{3}{5})^2 \cdot \frac{5}{8} + \frac{7}{8}$

f. $\frac{5}{6} \div \frac{1}{3} + 1\frac{3}{4}$

10. Evaluate. Write answers in decimal form.

a. 4.06×3.5

b. $28.644 \div 3.1$

c. $\frac{6.045+3.9}{5}$

d. $2(54.6 - 2.81)$

11. Solve each word problem.

- Shoshi made two types of cookies. She used $2\frac{5}{6}$ cups of sugar for one recipe and $3\frac{3}{4}$ cups of sugar for the other. If she had 12 cups of sugar originally, how many cups of sugar did she have left after making these 2 recipes?
- In a rectangular park, $\frac{1}{4}$ of the land is covered by a playground, $\frac{3}{8}$ of the land is covered by a basketball court, and the rest is covered by a tennis court. If the park covers 12,000 square feet, how many square feet does the tennis court cover?
- A trail in central park is $3\frac{1}{5}$ miles. Yoni runs $\frac{7}{8}$ of the way. How many miles does he run?

- d. A stack of textbooks is 21 inches tall. Each book is $1\frac{3}{4}$ inches thick. How many textbooks are in the stack?
- e. Which gives you more toothpaste for your money: 18 ounces of toothpaste for \$7.98 or 27 ounces of toothpaste for \$12.42?
- f. Gas costs \$2.71 per gallon. Your car requires 31 gallons of gas. If you already have 5 gallons of gas in your car, can you fill the tank with \$70?

Ratio, Proportion & Percent

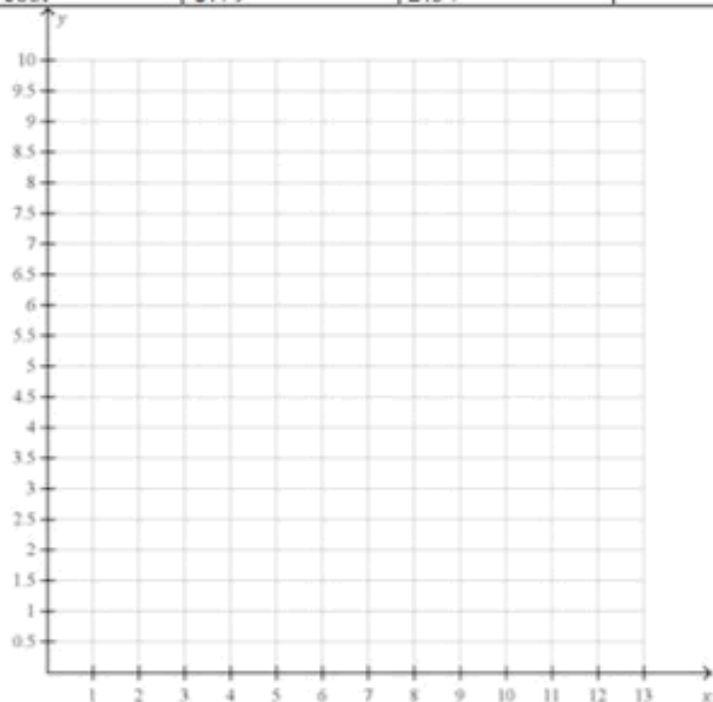
12. Solve each problem below.

- a. On Monday, Karen swims 12 laps in 30 minutes. On Tuesday, she swims 15 laps in 45 minutes. On which day does she swim at a faster average speed?

- b. In an animal shelter, the ratio of dogs to cats is 5:3. If there are 40 animals at the shelter, how many cats are there?

- c. At a market, you can buy rice by the pound. They charge by the pound at a constant rate. Find the missing values and graph the data. What do you notice?

x pounds	1		5	
y cost	\$.79	2.37		9.48



- d. Carly, Juliette, and Shoshi shared a box of markers in the ratio of 2 to 3 to 4. If there were 108 markers, how many did each girl get?
- e. A map of New York City has a scale of 1.5 inches equals 75 miles.
- a) If Manhattan to Buffalo is 7.6 inches on the map, what is the actual distance between the cities?
 - b) If Rochester to Syracuse is 90 miles, how far apart are they on the map?
- f. Anna types 385 words in 7 minutes. At this speed, how many words can she type in 15 minutes?
- g. Gabrielle earned a grade of 80% on a math test that had 20 problems. How many problems on this test did she answer incorrectly? (Round to the nearest whole number.)

You may use a calculator for the remainder of the review.

- h. Batsheva finds a coat she likes originally listed for \$280. They are having a 40% storewide sale, and Batsheva has an extra 10% off coupon. If there is 8% sales tax, how much does she pay for the coat?

- i. Abbie's class went out to breakfast and received a bill for \$54.65. The tax was 8.25%, and they wanted to leave a 15% tip. How much should each person pay if there are 10 people in the class and they split the bill evenly?

- j. Recently, Netflix increased the cost of its membership by \$2.00 to a monthly price of \$14.50. Find the percent increase.

- k. In the 6th grade, 70 out of 75 students brought in coats for the coat drive. In the 10th grade, 92 out of 110 students brought in coats for the coat drive. What was the difference in the percent of students that brought in coats in the 6th and 10th grades?

ANSWER KEY

1.

- a. 82
- b. 22
- c. 25

2.

PPF	Expanded Form	Value
5^3	$5 \cdot 5 \cdot 5$	125
2^5	$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$	32
$3^2 \cdot 5^2$	$3 \cdot 3 \cdot 5 \cdot 5$	225
$7^2 y^4$	$7 \cdot 7 \cdot y \cdot y \cdot y \cdot y$	$49y^4$
$3^2 n^5$	$3 \cdot 3 \cdot n \cdot n \cdot n \cdot n \cdot n$	$9n^5$
$2^6 \cdot 7$	$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 7$	448

3.

- a. 1, 3, 7, 21
- b. 1, 3, 5, 9, 15, 45
- c. 1, 2, 3, 4, 6, 8, 9, 12, 16, 18, 24, 36, 48, 72, 144

4.

- a. 3
- b. 2
- c. 5
- d. 7:07:12

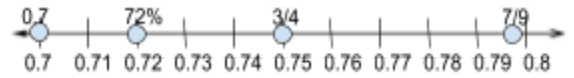
5.

- a. $0.\overline{6}$
- b. $0.\overline{18}$
- c. 2.5

6.

- a. $5\frac{39}{50}$
- b. $2\frac{1}{3}$
- c. $\frac{1}{200}$

7.



8.

- a. =
- b. <
- c. >
- d. <

9.

- a. $10\frac{19}{33}$
- b. $\frac{33}{100}$
- c. $14\frac{2}{3}$
- d. $1\frac{1}{10}$
- e. $1\frac{1}{18}$
- f. $4\frac{1}{4}$

10.

- a. 14.21
- b. 9.24
- c. 1.989
- d. 103.58

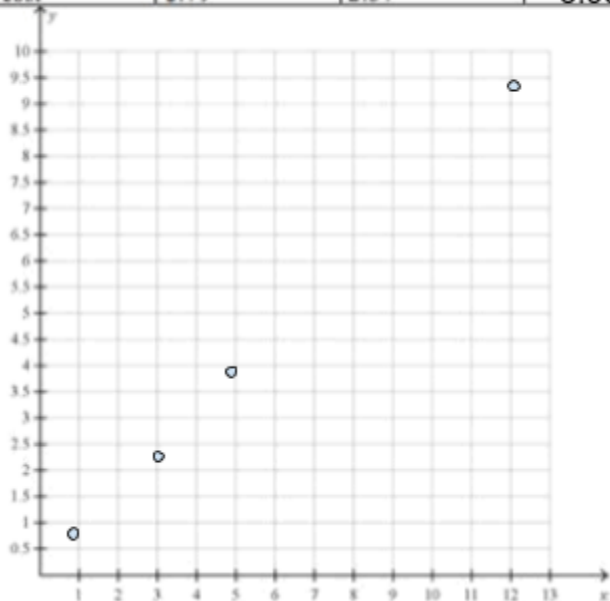
11.

- a. $5\frac{5}{12}$
- b. 4,500
- c. $2\frac{4}{5}$
- d. 12
- e. 18 ounce option
- f. No (\$0.46 over)

12.

- a. Monday (2.5 mins/lap)
- b. 24
- c. Since the rate is constant, we can draw a line through the points and it will go through the origin.

x pounds	1	3	5	12
y cost	\$0.79	2.37	3.95	9.48



- d. C 24, J 36, S 48
- e. a) 380 mi b) 1.8 in
- f. 825
- g. 4
- h. \$163.30
- i. \$6.74
- j. 16%
- k. $9.\overline{69}\%$