

Name: _____
Class: _____

Grade 7 to 8 - Summer (2020) Math Packet

Part 1. Multiple Choice

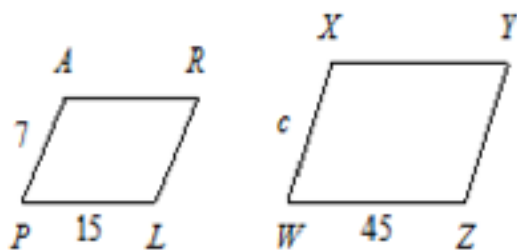
Directions: Answer all questions in this part. Choose the letter that best represents your answer and circle it. SHOW ALL NECESSARY WORK.

For 1-3, write the ratio in simplest form.

1. **30 : 48**
a. $\frac{1}{6}$ b. $\frac{5}{8}$ c. $\frac{30}{48}$ d. $\frac{8}{5}$
2. **24 to 20**
a. $\frac{1}{4}$ b. $\frac{6}{5}$ c. $\frac{24}{20}$ d. $\frac{5}{6}$
3. **6 out of 9**
a. $\frac{1}{3}$ b. $\frac{3}{2}$ c. $\frac{2}{3}$ d. 3
4. Marty has saved \$72. He spent \$8 on a video rental. Write a ratio as a fraction in simplest form to represent what portion of his savings he has left.
a. $\frac{64}{72}$ b. $\frac{8}{72}$ c. $\frac{1}{9}$ d. $\frac{8}{9}$
5. Grete Waitz won the New York Marathon nine times. The rate at which she ran during her last victory in 1988 was 26 miles in 148 minutes. To the nearest hundredth, what was the unit rate for her last race?
a. 5.69 mi/min b. 0.18 mi/min c. 0.26 mi/min d. 0.73 mi/min

6. $\frac{21}{a} = \frac{168}{84}$
a. 882 b. 8 c. 84 d. 32
7. $\frac{10}{a} = \frac{15}{30}$
a. 2 b. 5 c. 10 d. 20
8. $\frac{b}{10.5} = \frac{157.5}{52.5}$
a. 787.5 b. 320.5 c. 31.5 d. 3.5
9. Write a proportion that can be used to find the cost of 10 notebooks if 3 notebooks cost \$1.98.
a. $\frac{3}{10} = \frac{n}{\$1.98}$ c. $\frac{10}{3} = \frac{\$1.98}{n}$
b. $\frac{10}{\$1.98} = \frac{n}{3}$ d. $\frac{3}{\$1.98} = \frac{10}{n}$

10. Parallelogram *PARL* ~ parallelogram *WXYZ*. Find the value of *c*.



- a. 45 b. 21 c. 3 d. 22

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- 11 16. Write 88.2% as a decimal.
a. 8.82 b. 882 c. 0.882 d. 8,820
- 12 17. Write the percent as a fraction or mixed number in simplest form.
155%
a. $4\frac{1}{2}$ b. $15\frac{1}{2}$ c. $1\frac{11}{20}$ d. $\frac{9}{20}$
13. Find 78% of 380. Round to the nearest tenth of a percent if necessary.
a. 3.8 b. 29,640.0 c. 296.4 d. 487.2
14. Emma already has read 6 of 20 books on her summer reading list. What percent of the books on her list has she read already?
a. 23.1% b. 30.0% c. 333.3% d. 0.3%
15. What percent of 67 is 33? If necessary, round to the nearest tenth of a percent.
a. 203.0% b. 0.5% c. 49.3% d. 33.0%
16. Write 88.2% as a decimal.
a. 8.82 b. 882 c. 0.882 d. 8,820
17. Write the percent as a fraction or mixed number in simplest form.
155%
a. $4\frac{1}{2}$ b. $15\frac{1}{2}$ c. $1\frac{11}{20}$ d. $\frac{9}{20}$
18. Write the decimal as a percent.
0.798
a. 0.0798% b. 79.8% c. 7.98% d. 798%
1.513
a. 151.3% b. 1,513% c. 0.1513% d. 15.13%
19. Write the fraction as a percent. Round to the nearest tenth of a percent if necessary.
 $\frac{17}{40}$
a. 0.425% b. 4.25% c. 42.5% d. 235.3%
 $\frac{1}{7}$
a. 14.3% b. 7% c. 1% d. 1.43%

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20. $-6 + 3x = -9$

a. -1

b. -6

c. -5

d. -3

21. $-3x + 6 = -9$

a. -3

b. 5

c. 3

d. 1

22. $2x - 26 = 10$

23. $\frac{x}{5} + 9 = 4$

c. 2

d. 18

a. 65

b. -25

c. 5

d. 20

24. $5m + 4m = 72$

a. -72

b. 9

c. 8

d. 72

25. $2(x + 4) = 30$

a. 7

b. 11

c. 15

d. 19

26. $0.2x + 5 = 8$

a. 40

b. 15

c. 65

d. -15

27. $\frac{3}{4}(x - 12) = 3$

a. 20

b. 9

c. 16

d. -12

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28. Uma wants to buy a video game system for \$270. She has \$60 and is saving \$30 each week. Solve the equation $30w + 60 = 270$ to find how many weeks w it will take Uma to save enough to buy the system.
 a. 6 weeks b. 7 weeks c. 9 weeks d. 8 weeks
29. Mandy and 2 friends bought some mechanical pencils at a special sale. They divided some of the pencils equally among themselves and then gave 3 to Mandy's little brother. At that time they had 19 pencils left. Solve the equation $\frac{P}{3} - 3 = 19$ to find the number of pencils P that they bought at the sale.
 a. 48 pencils b. 57 pencils c. 66 pencils d. 22 pencils
30. The 9 officers of the Student Council are going on a trip to an amusement park. Each student must pay an
 31. Work-Out Corner has 5 more than 3 times as many exercise bicycles as The Gym. Together they have 21 bicycles. Solve the equation $x + 3x + 5 = 21$ to find the number of bicycles at Work-Out Corner.
 a. 4 bicycles b. 17 bicycles c. 7 bicycles d. 25 bicycles

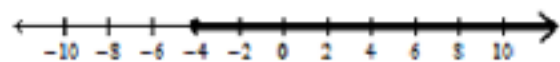
For 32-34, solve and graph the inequality.

32. $-x - 4x \leq 0$

a. $x \geq 0$



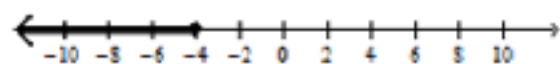
c. $x \geq -4$



b. $x \leq 0$



d. $x \leq -4$



33. $14 - 2x > 18$

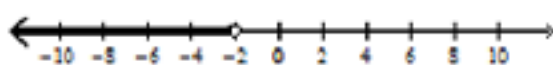
a. $x > -9$



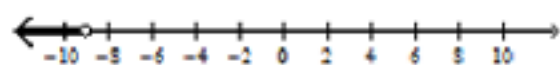
c. $x > -2$



b. $x < -2$

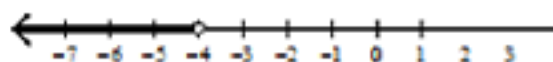


d. $x < -9$

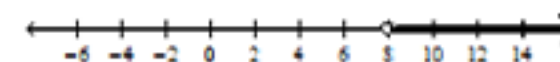


34. $-\frac{x}{4} - 6 \geq -8$

a. $x < -4$



c. $x > 8$



b. $x \leq 8$

d. $x \geq -8$

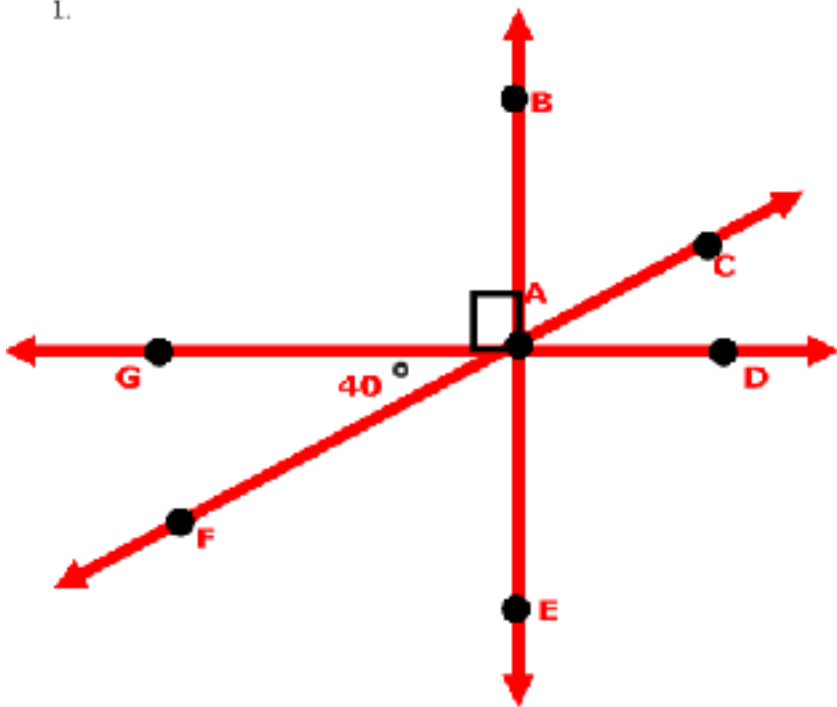
Part 2: Short Response

Directions: Answer all questions in this part. Show all necessary work.

Write your answer in the space provided. Calculators are not preferred.

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1.



Find the measure of the following angles:

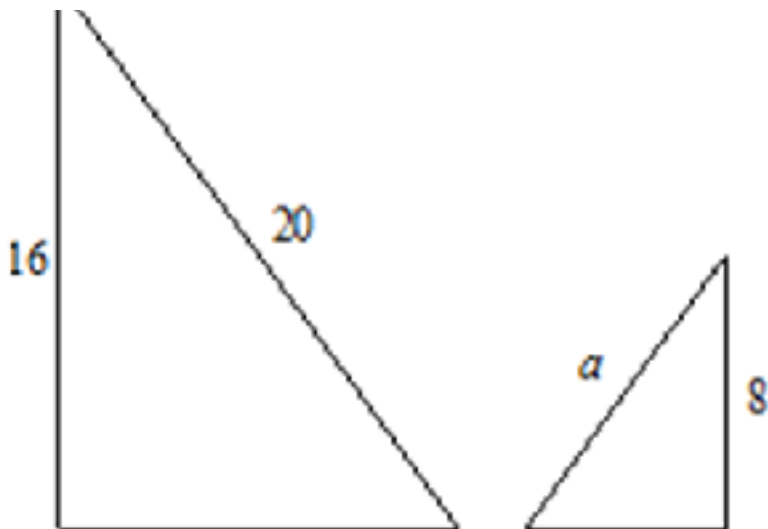
1. $\angle FAE$ _____

2. $\angle CAD$ _____

3. $\angle BAC$ _____

4. $\angle CAE$ _____

5. $\angle DAF$ _____



3. Four times the sum of a number and 15 is at least 120. Let x represent the number.

Find all possible values for x .

4. Tell whether the two ratios form a proportion. Explain.

$\frac{1}{12}$ and $\frac{8}{96}$

$\frac{9}{4}$ and $\frac{11}{5}$

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5. A car travels 497 miles in 8 hours. Find the unit rate.

Round to the nearest tenth if necessary.

The unit rate is _____.

6. The frequency table below shows the ages of the first ten people in line at the movie theater. Make a line plot that shows the same data as the frequency table.

Ages	Frequency
22	3
23	2
27	2
29	1
30	2



Part 3: Extended Response

Directions: Answer all questions in this part. A calculator is permitted, however, show all necessary calculations. Write your answer(s) in the space provided.

7. Caitlin had \$402 in her bank account. She withdrew \$15 each week to pay for a swimming lesson. She now has \$237.

- a. Write an equation that can be used to find the number of swimming lessons that she paid for.

- b. How many swimming lessons did she pay for?

- c. At the time she had \$237, the cost of a lesson rose to \$19. How many lessons can she pay for with her remaining \$237?

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8. Jeremy is building a large deck for a community center. The deck is shaped as a rectangle. The width of the deck is 29 feet. The perimeter of the deck is to be at least 134 feet.

a. Write an inequality that represents all possible values for the length of the deck.

b. Find all possible values for the length of the deck.

9. Find the volume of each figure. Round off to the nearest tenth (if necessary). Include a diagram and a formula as part of your work.

A) a cube with each edge 10 ft long

B) a rectangular prism with a square base 7 ft on each side and a height of 10 ft

C) a cylinder with a base area of 100 ft^2 and a height of 8 ft

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10. Solve each equation. Check your solution.

A) _____ $2s - 3s = 20$

B) _____ $0.6(y + 3) = 4.8$

C) _____ $78 = -2(m + 3) + m$