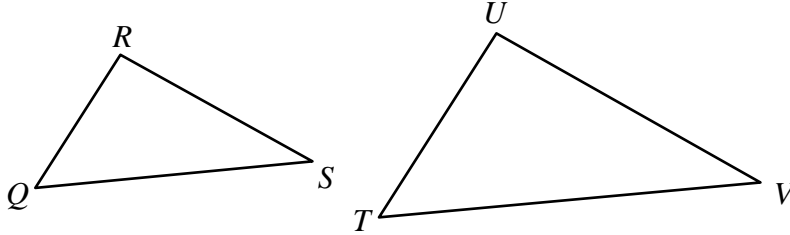


Name \_\_\_\_\_

Algebra II Pretest

1. In the figure (not drawn to scale),  $\triangle QRS$  is similar to  $\triangle TUV$ . Find length  $UV$  to the nearest hundredth if  $QR = 6$ ,  $TU = 17$ , and  $RS = 11$ .



- [A] 46.36      [B] 9.27      [C] 3.88      [D] 31.17

[1] \_\_\_\_\_

2. Subtract:  $(-5x^2 + x - 6) - (-3x^2 - 5x + 2)$

- [A]  $-2x^2 - 4x - 4$     [B]  $-2x^2 + 6x - 4$     [C]  $-2x^2 - 6x - 8$     [D]  $-2x^2 + 6x - 8$

[2] \_\_\_\_\_

3. Solve:  $x + 4y = 1$

$$y = -3x + 14$$

- [A]  $(5, -1)$       [B] no solution      [C]  $\left(-1, \frac{1}{2}\right)$       [D]  $(6, -4)$

[3] \_\_\_\_\_

4. A plumber charges \$51 for 2 hours of work and \$74.25 for  $3\frac{1}{2}$  hours work. Write an equation relating cost to number of hours worked.

[4] \_\_\_\_\_

5. Find the mean, median, and mode of the data in the following sample.

1, 28, 9, 21, 30, 30, 15, 25, 11, 30

- [A] 15.5, 20, 30      [B] 23, 20, 30      [C] 20, 23, 30      [D] 30, 23, 20

[5] \_\_\_\_\_

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6. A and B are independent events.

$$P(B) = \frac{2}{3}, P(A \text{ and } B) = \frac{2}{7}. \text{ Find}$$

$P(A)$ .

[A]  $\frac{29}{12}$

[B]  $\frac{3}{14}$

[C]  $\frac{3}{7}$

[D]  $\frac{1}{3}$

[6] \_\_\_\_\_

7. Which equation is a direct variation with a constant of variation of  $\frac{2}{3}$ ?

[A]  $2y = \frac{x}{3}$

[B]  $y = 2x + 3$

[C]  $2y = 3x$

[D]  $x = 2y + 3$

[E]  $3y = 2x$

[7] \_\_\_\_\_

8. Solve:  $\frac{5}{4}x = 80$

[8] \_\_\_\_\_

9. Tell whether the statement “Two lines with negative slopes can be parallel” is *true* or *false*. Explain your choice.

[9] \_\_\_\_\_

10. a. Create a data table or set of four ordered pairs that is a function.  
b. Add one ordered pair to the data set to make the data a relation but *not* a function.

[10] \_\_\_\_\_

11. A cafe serves a variety of stuffed potatoes. You can choose from russet, yellow, or white potatoes with any of 4 different fillings. How many different varieties of stuffed potatoes can you choose from?

[11] \_\_\_\_\_

12. Evaluate the function for the domain  $\{1, 2, 3, 4\}$ . Is the function *increasing*, *decreasing*, or *neither*?  
 $f(r) = 0.8^r$

[12] \_\_\_\_\_

13. Explain how to use the  $x$ - and  $y$ -intercepts to find  $X_{\min}$ ,  $X_{\max}$ ,  $Y_{\min}$ , and  $Y_{\max}$  to graph a linear equation on a graphing calculator.

[13] \_\_\_\_\_

14. Solve:  $12 = \frac{1}{7}(35x - 7)$

[A]  $\frac{13}{5}$

[B]  $\frac{11}{5}$

[C]  $\frac{5}{11}$

[D]  $\frac{5}{13}$

[14] \_\_\_\_\_

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15. In your own words, describe the cross products of a proportion. Include an example.

[15] \_\_\_\_\_

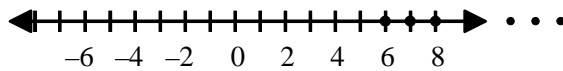
16. If 3 boxes of raisins cost \$13.80, how much will 7 boxes of raisins cost?

[16] \_\_\_\_\_

17. Multiply:  $\frac{x^2}{x+4} \cdot \frac{x^2+10x+24}{x^2+6x}$

[17] \_\_\_\_\_

18. The number line shows the graph of all the solutions of an inequality with the positive integers as a replacement set. Which could not be that inequality?



- [A]  $6 \leq p$       [B]  $6 < p$       [C]  $-6 \geq -p$       [D]  $-p \leq -6$       [E]  $p \geq 6$

[18] \_\_\_\_\_

19. Solve:  $\sqrt{x+6} = x$

[19] \_\_\_\_\_

20. a. Use a graphing calculator to graph  $y = 4|x| - 1$  and  $y = 2$ .  
b. Use the CALC feature of the calculator to identify the  $x$ -coordinates of the points where the graphs intersect.  
c. What absolute value equation have you solved?

[20] \_\_\_\_\_

21. Explain how to use the number of negative factors to determine whether the value of a product like  $(-2)(-2)(-2)(-2)$  is positive or negative.

[21] \_\_\_\_\_

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Algebra II Pretest

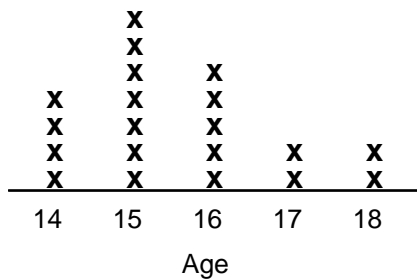
22. The number  $G$  of gears a machine can make varies directly as the time  $T$  it operates. If it can make 4960 gears in 8 hours, how many gears can it make in 10 hours?

[22] \_\_\_\_\_

23. Factor:  $x^2 + 12x + 36$

[23] \_\_\_\_\_

24. A teacher asked his class of 20 students, "What is your age?" Their responses are shown on the line plot below.



Find the mean, median, and mode of the data.

[24] \_\_\_\_\_