

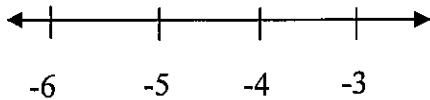
Take Home Quiz #3
SHOW ALL ORGANIZED WORK

DUE:

<p>1. Which one shows the multiplicative inverse property?</p> <p>[2]</p> <p>A. $x \cdot -x = 1$</p> <p>B. $\frac{2}{3} \cdot \frac{-2}{3} = 1$</p> <p>C. $\frac{2}{3} \cdot \frac{-3}{2} = 1$</p> <p>D. $\frac{2}{3} \cdot \frac{3}{2} = 1$</p>	<p>2. Which equation is equivalent to: $5x + 7y = 12$ (Solve to show work)</p> <p>[2]</p> <p>A. $y = 5x - 12$</p> <p>B. $y = 12 - 5x$</p> <p>C. $y = \frac{5x - 12}{7}$</p> <p>D. $y = \frac{12 - 5x}{7}$</p>
<p>3. Simplify the following expression.</p> <p>[2]</p> <p>$7x + 2xy - 8yx - 4y$</p> <p>_____</p>	<p>4. True or False:</p> <p>[2] The sum of a rational number and an irrational number is always irrational</p> <p>_____</p>
<p>5. How many solutions does $4x - 5 = 4x + 2$ have? (Solve to show work)</p> <p>[2]</p> <p>A. One</p> <p>B. None</p> <p>C. Two</p> <p>D. Infinitely many</p>	<p>6. Write an equation for the following verbal sentence.</p> <p>[2]</p> <p>The sum of 2 times a number, 4 times a number, and 5 is equal to 3 times the difference of the number and 2.</p> <p>A. $2x + 4x + 5x = 3x - 2$</p> <p>B. $2x + 4x + 5 = 3(x - 2)$</p> <p>C. $6x + 5 = 3x - 2$</p> <p>D. $6x - 5 = 3(x + 2)$</p>
<p>7. Solve the following equation for x.</p> <p>[4]</p> <p>$3(x - 2) + 2x = 4$</p>	<p>8. Solve for x.</p> <p>[4]</p> <p>$x - 9 + 7x = -49 - 2x$</p>

9. Graph $x < -4$ on the number line.
Write the solution in interval notation.

[4]



Interval Notation: _____

10. Represent the interval below using set builder notation and interval notation.

[4]



Set Builder Notation: _____

Interval Notation: _____

11. Solve the inequality: $5x - 3 < -13$.

[4]

Circle each of the following values of x that lie in the solution set of this inequality.

$$\begin{array}{lll} x = 5 & x = -6 & x = -\pi \\ x = -3 & x = \frac{1}{3} & x = -\sqrt{25} \end{array}$$

12. Which of the following represents the solution set of the inequality: $12 < 5x - 18$?
(Solve to show work)

[2]

- A. $6 > x$
- B. $6 > -x$
- C. $x < 6$
- D. $x > 6$

13. Which of the following represents the solution set of the inequality: $-4x + 3 \leq -25$?
(Solve to show work)

[2]

- A. $[7, \infty)$
- B. $(7, \infty)$
- C. $(-\infty, 7)$
- D. $(-\infty, 7]$

14. What is the solution set of the inequality $-8 < x + 1 \leq 5$?

[2]

- (Solve to show work)
- A. $\{x \mid -9 < x < 4\}$
 - B. $\{x \mid -8 < x \leq 5\}$
 - C. $\{x \mid -9 > x \geq 4\}$
 - D. $\{x \mid -9 < x \leq 4\}$

15. Solve the following inequality and graph the solution on the number line below.

[6]

$$2(3x - 4) < 3x - 17$$



16. Solve the following compound inequality and graph the solution. Write the solution set as a single inequality and then in interval notation.

[6]

$$x + 7 \leq 13 \text{ and } x + 4 > 2$$



Interval Notation: _____