



Quiz 3.1 Review Sheet

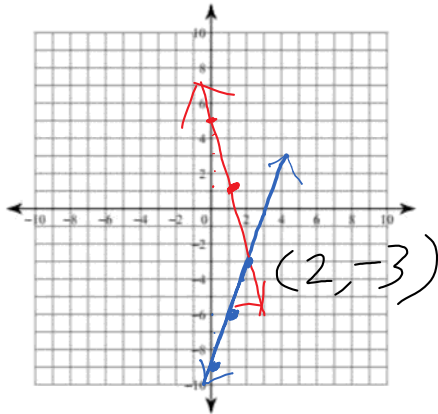
NAME: \_\_\_\_\_ Per. \_\_\_\_\_

1. What is the basic form of a piece-wise function?

See example to the right -->

2. Solve ONE of the following systems of equations by graphing:

- a.  $y = -4x + 5$  and  $y = 3x - 9$
- b.  $x + 3y = 6$  and  $x - 3y = 6$
- c.  $3x - 2y = 4$  and  $y = -2x + 5$
- d.  $3x - 2y = 6$  and  $x - y = 2$



1.) A man walks for 45 minutes at a rate of 3 mi/h, then jogs for 75 minutes at a rate of 5 mi/h, then rests for 30 minutes, and finally walks for 90 minutes at rate of 3 mi/h. Write a function expressing the distance  $D(t)$  traveled as a function of time  $t$ .

$$D(t) = \begin{cases} 3t, & \text{where } 0 < t \leq 0.75 \\ 5t - 1.5, & \text{where } 0.75 < t \leq 2 \\ 8.5, & \text{where } 2 < t \leq 2.5 \\ 3t + 1, & \text{where } 2.5 < t \leq 4 \end{cases}$$

2.) Is this a piecewise-defined function? Why or why not?

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3. Solve ONE of the following systems of equations by substitution:

- a.  $4x + 3y = -8$  and  $-8x + y = -12$
- b.  $4x - 2y = 8$  and  $y = -2$
- c.  $14x - 2y = 46$  and  $-7x + y = -23$
- d.  $5x + y = 8$  and  $-3x + 2y = -10$

$$\begin{array}{r} 4x + 3y = -8 \\ -8x + y = -12 \\ \hline 2 = 8x - 12 \\ 8x = 14 \\ x = 1.75 \end{array} \quad \begin{array}{r} 4x + 3(8x - 12) = -8 \\ 4x + 24x - 36 = -8 \\ 28x - 36 = -8 \\ 28x = 28 \\ x = 1 \end{array}$$

4. Solve ONE of the following systems of equations by Elimination:

- a.  $10x - 8y = 4$  and  $5x + 3y = -9$
- b.  $-15x + 9y = 27$  and  $5 - y = 17$
- c.  $-7x - 8y = -23$  and  $4x + 4y = 12$
- d.  $-3x - 10y = -4$  and  $x - 5y = 18$

$$\begin{array}{r} 10x - 8y = 4 \\ (-5x + 3y = -9) \cdot 2 \\ \hline 0 - 2y = -14 \\ -2y = -14 \\ y = 7 \end{array}$$

$$y = 7$$

$$-5x + 3(7) = -9$$

$$-5x + 21 = -9$$

$$\begin{array}{r} -21 \\ \hline \end{array} \quad \begin{array}{r} -21 \\ \hline \end{array}$$

$$\begin{array}{r} -5x = -30 \\ \hline \end{array}$$

$$\begin{array}{r} -5 \\ \hline \end{array} \quad \begin{array}{r} -5 \\ \hline \end{array}$$

$$x = 6$$

$$(6, 7)$$