

Algebra 2

Topic 3 // Quiz 1 "Review A"

N: **Key**

D:

P: 1 2 3 4 5 6

1. (+2) Solve by Elimination → eliminate "y"

$$3(5x - 2y = -19) \rightarrow 15x - 6y = -57$$

$$2(2x + 3y = 0) \rightarrow 4x + 6y = 0$$

$$\begin{array}{r} 19x \\ 19 \end{array} = -\frac{57}{19}$$

$$\underline{x = -3}$$

$$2(-3) + 3y = 0$$

$$\begin{array}{r} 6 + 3y = 0 \\ +6 \quad +6 \end{array}$$

$$\frac{3y}{3} = \frac{6}{3} \rightarrow \underline{y = 2}$$

$$\boxed{(-3, 2)}$$

2. (+2) Solve by Substitution

$$x + 12y = 68$$

$$x = 8y - 12$$

$$(8y - 12) + 12y = 68$$

$$8y - 12 + 12y = 68$$

$$\begin{array}{r} 20y - 12 = 68 \\ +12 \quad +12 \end{array}$$

$$\frac{20y}{20} = \frac{80}{20}$$

$$\underline{y = 4}$$

$$x = 8y - 12$$

$$x = 8(4) - 12$$

$$x = 32 - 12$$

$$\underline{x = 20}$$

$$\boxed{(20, 4)}$$

3. (+2) The sum of two numbers is 48. One number is 12 more than the other. Find the two numbers.

$$x + y = 48$$

$$x = y + 12$$

$$(y + 12) + y = 48$$

$$y + 12 + y = 48$$

$$\begin{array}{r} 2y + 12 = 48 \\ -12 \quad -12 \end{array}$$

$$\frac{2y}{2} = \frac{36}{2} \rightarrow \underline{y = 18}$$

$$x = y + 12$$

$$x = (18) + 12$$

$$\underline{x = 30}$$

$$\boxed{18 \text{ and } 30}$$

4. (+2) Solve the system

$$5x - y = 4$$

$$5x - y = 4$$

$$-1(2x - y = 1) \rightarrow -2x + y = -1$$

$$\begin{array}{r} 3x = 3 \\ \frac{3x}{3} = \frac{3}{3} \end{array} \quad \downarrow \quad \underline{x = 1}$$

$$2x - y = 1$$

$$2(1) - y = 1$$

$$\begin{array}{r} 2 - y = 1 \\ -2 \quad -2 \end{array}$$

$$\begin{array}{r} -y = -1 \\ \frac{-y}{-1} = \frac{-1}{-1} \end{array} \rightarrow \underline{y = 1}$$

$$\boxed{(1, 1)}$$

5. (+2) Solve the system

$$-2(3x + 2y = 10) \rightarrow -6x - 4y = -20$$

$$6x + 4y = 15$$

$$\underline{6x + 4y = 15}$$

$$0 = -5$$

↓
not true

↓
 $\boxed{\text{no solutions}}$

6. (+2) Jen has a total of 24 nickels and dimes. If the total value of the coins is \$2.50, how many nickels and dimes does she have? **Just write the system that you would use to solve it. Do not solve it!**

$$n + d = 24$$

$$.05n + .10d = 2.50$$

or

$$n + d = 24$$

$$5n + 10d = 250$$