

Bellwork Alg 2A Wednesday, November 30, 2016

Solve each system of equations by Graphing, Substitution, or Elimination. You must use each method at least once.

1. $12x + 9y = 63$
 $8x + 6y = 42$

2. $7a - 3b = 22$
 $8a + b = 34$

3. $42m - 17n = -101$
 $70m + 13n = -127$

4. $-8c + 10d = 60$
 $-4c + 2d = 12$

5. $y = \frac{1}{2}x - 4$
 $14x + 7y = 7$

6. You have a pile of 59 coins. In the pile there is only nickels and pennies. When you total up the coins you have \$1.27. Write and solve a system of equations to find out how many pennies and nickels you have.

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ANSWERS

Solve each system of equations by Graphing, Substitution, or Elimination. You must use each method at least once.

1. $12x + 9y = 63$
 $8x + 6y = 42$
Elim

2. $7a - 3b = 22$
 $16a + 2b = 68$
sub or Elim

3. $42m - 17n = -101$
 $70m + 13n = -127$
Elim

4. $-8c + 10d = 60$
 $-4c + 2d = 12$
Sub or Elim

5. $y = \frac{1}{2}x - 4$
 $14x + 7y = 7$ *Graph*

work & Answers on next page

6. You have a pile of 59 coins. In the pile there is only nickels and pennies. When you total up the coins you have \$1.27. Write and solve a system of equations to find out how many pennies and nickels you have.

ALG 2A Bellwork Answers

① ELIMINATION

$$2(12x + 9y = 63)$$

$$3(8x + 6y = 42)$$

$$24x + 18y = 126$$

$$24x + 18y = 126$$

MANY SOL'S

These are the same line.

② Substitution

Solve 2nd eq for b

$$16a + 2b = 68$$

$$b = \frac{68 - 16a}{2} = 34 - 8a$$

$$7a - 3(34 - 8a) = 22$$

$$7a - 102 + 24a = 22$$

$$31a - 102 = 22$$

$$\frac{31a}{31} = \frac{124}{31} \quad a = 4$$

$$b = 34 - 8(4) = 34 - 32 = 2$$

③ $5(42m - 17n = -101)$
 $3(70m + 13n = -127)$

$$210m - 85n = -505$$

$$-210m + 39n = -381$$

$$-124n = -124$$

$$(-2, 1)$$

$$n = 1$$

$$70m + 13(1) = -127$$

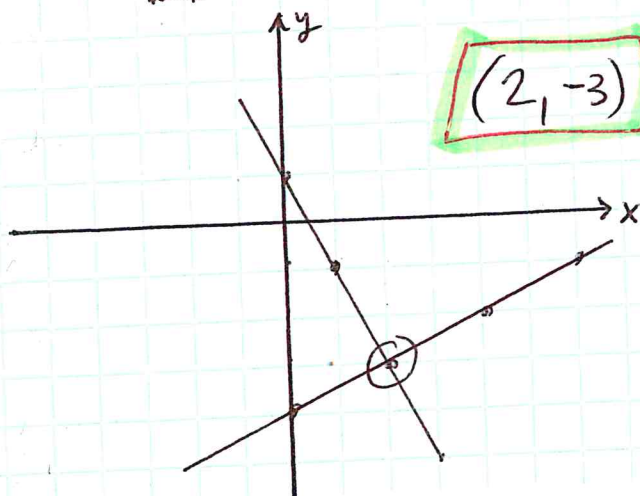
$$70m = -140$$

$$m = -2$$

⑤ $y = \frac{1}{2}x - 4$

$$14x + 7y = 7 \rightarrow y = \frac{7 - 14x}{7} \quad y = 1 - 2x$$

$$(2, -3)$$



④ substitution

Solve 2nd eq for d

$$-4c + 2d = 12$$

$$d = \frac{12 + 4c}{2} = 6 + 2c$$

$$-8c + 10(6 + 2c) = 60$$

$$-8c + 60 + 20c = 60$$

$$8c + 60 = 60$$

$$8c = 0$$

$$c = 0$$

$$d = 6 + 2(0) = 6$$

⑥ $p = \# \text{ pennies}$ $N = \# \text{ nickels}$

$$N + p = 59 \rightarrow p = 59 - N$$

$$.05N + .01p = 1.27$$

$$.05N + .01(59 - N) = 1.27$$

$$.05N + .59 - .01N = 1.27$$

$$.04N + .59 = 1.27$$

$$.04N = .68$$

$$N = 17$$

$$17 + p = 59$$

$$p = 42$$

42 pennies
17 Nickels