Bellwork   Alg 2A   Monday, November 14, 2016

Without graphing state if each system of linear equations has One, None, or Many Solutions.

1.
$$y = \frac{3}{2}x - 4$$
$$12x - 8y = 24$$

2.
$$y = -2x + 11$$
$$6x - 2y = 22$$

3. Together you and I have $45. You have eighteen less than twice as much as I do. How much money does each of us have?

Lines are parallel

$$\hookrightarrow y = \frac{24 - 12x}{-8} = -3 + \frac{12}{8}x$$
$$= -3 + \frac{3}{2}x$$

[NO SOLUTION]

Different slopes

$$\hookrightarrow y = \frac{22 - 6x}{-2} = -11 + 3x \quad (m = 3)$$

[ONE SOLUTION]

$y = $ \$ you have
$I = $ \$ I have

[You have \$24]
[I have \$21]

$$y + I = 45 \qquad y = (2I - 18)$$

SUBSTITUTE FOR y IN the other eq.

$$2I - 18 + I = 45$$
$$3I - 18 = 45$$
$$\underline{+18 \quad +18}$$
$$\frac{3I}{3} = \frac{63}{3} \qquad (I = \$21)$$

$$y = 2(21) - 18$$
$$(y = \$24)$$

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