Bellwork Tuesday, March 25, 2014

Without graphing tell if each system of equations has ONE, NONE, or MANY solutions

1. $y = -\frac{1}{2}x + 6$

$4x + 8y = 48$ $-4x$

$-4x$

$\frac{-1}{2}x + 6$

Many Solutions

2. $y = 2x - 9$

$5x + 10y = 20$ $-5x$

10

$y = 2 - \frac{1}{2}x$

One

3. $y = -3x + 7$

$-6x - 2y = 8$ $+6x$

-2

$y = 4 - 3x$

None

4. $y = 4x - 9$

$12x + 3y = 6$ $-12x$

3

$y = -4x + 2$

One

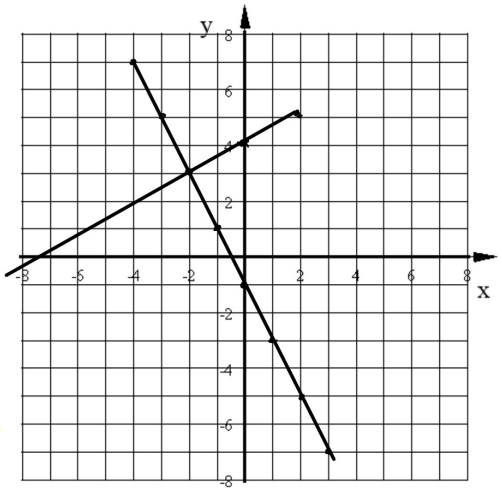
5. Solve this system of equations by graphing.

$y = -2x - 1$

$3x - 6y = -24$

$\frac{-24 - 3x}{-6}$

$4 + \frac{1}{2}x$



(-2, 3)

6. Solve this system of equations using SUBSTITUION.

Y = -3X + 5

2X - 6Y = -70

$6 + 5 = 11$

(-2, 11)

$2x - 6(-3x + 5) = -70$

$2x + 18x - 30 = -70$

$20x - 30 = 70$ $x = -2$

$+30$

$20 = -40$

7. Solve this system of equations using ELIMINATION.

(1.25, 4)

$2(6e + 5f = 27.5)$

$3(4e - 3f = -7)$

$12e + 10f = 55$

$-(12e - 9f = -21)$

$19f = 76$

$f = 4$

$4e - 3(4) = -7$

$4e - 12 = -7$

$+12 \quad +12$

$\frac{4e}{4} = \frac{5}{4}$

$e = 1.25$

8. Mario opens a small pizza shop. The equipment cost $25,000. Rent on the building is $1200 per month. Insurance and payroll cost him another $1500 per month. Mario expects to sell 800 pizzas per month for $5 each. Find the number of months it will take Mario to break-even.

Income Expenses

$800(5)y = 25{,}000 + 1200y + 1500y$

$4000y = 25000 + 2700y$

$2700 \quad -2700$

$\frac{1300y}{1300} = \frac{25{,}000}{1300}$

$y = 20$ months

small boxes weight 18 pounds each. When loaded the truck is carrying a total weight of 1854 pounds. Write and solve a system of equations to find the number of small and large boxes on the truck.

$S + L = 75$

$1854 = 30L + 18S$

$1854 = 30L + 18(L + 75)$

$1854 = 12L + 1350$

$-1350 \quad -1350$

$\frac{504}{12} = \frac{12L}{12}$

$L = 42$

$33 - 42$

$18(S + L = 75)$

$18S + 30L = 1854$

$18S + 18L = 1350$

$12L = 504$