UNIT 4: Modeling Real-World Situations with a SYSTEM of Equations in [y = mx+b] form.

Graphing lines using 2 points

y depends on x

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Review Writing Systems of Equations & Solving by Graphing

#1

Heather's Bunny

Heather has a bunny that weighs 5 pounds and gains 3 pounds per year.

y = weight and x = time

Equation: $y = 3x + 5$

(0,5) (3,14) $3(3)+5$ $9+5$

x	y (wt)
0	5
3	14

Heather's Cat

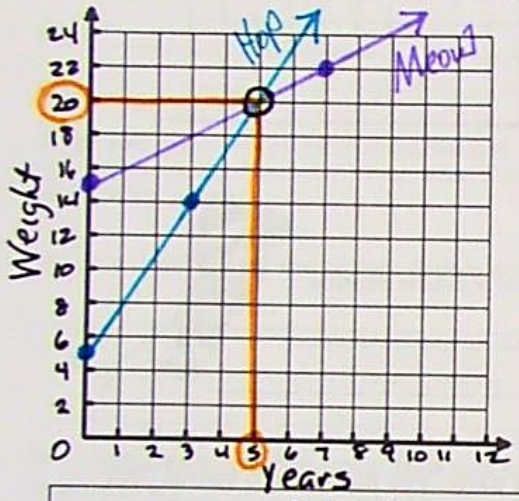
Heather has a cat that weighs 15 pounds and gains 1 pound per year.

Equation: $y = 1x + 15$

(0,15) (7,22) $1(7)+15$ 22

x (yrs)	y (wt)
0	15
7	22

Graph both equations on the following grid. Use an interval of 1 on the x-axis and 2 on the y-axis.



1) Name the point of intersection: (5, 20)

2) What does the point of intersection mean to the situation?

(5, 20) (yrs, wt) means in 5 years both pets weight is the same, 20lbs. Before 5 years, the cat weighed more, but after 5 years the bunny was heavier!

#2

Fertilizer A

You are testing two fertilizers on palm trees. Palm tree A is 8 cm tall growing at a rate of 6cm/day.

(0,8) (4,32) 6x

y = height x = # of days

Equation: $y = 6x + 8$ $6(4)+8$

days (x)	ht (y)
0	8
4	32

Fertilizer B

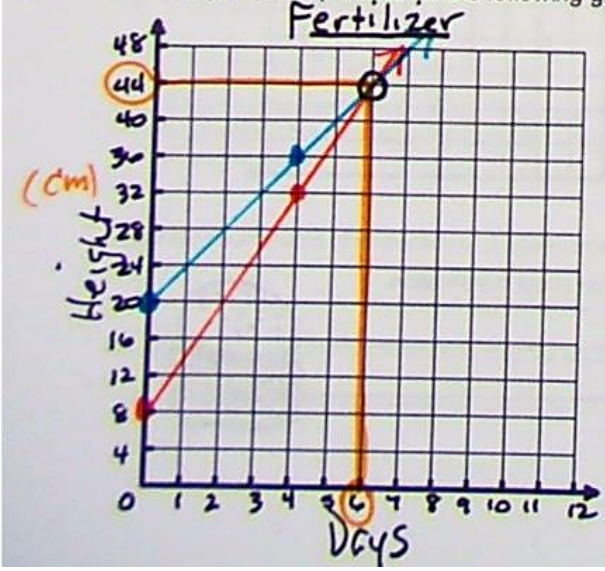
You are testing two fertilizers on palm trees. Palm tree B is 20 cm tall growing at a rate of 4cm/day.

Equation: $y = 4x + 20$

(0,20) (4,36) $4(4)+20$ $16+20$

days (x)	ht (y)
0	20
4	36

Graph both equations on the following grid. Use an interval of 1 on the x-axis and 4 on the y-axis.



1) Name the point of intersection: (6, 44)

2) What does the point of intersection mean to the situation?

(Days, Height) (6, 44) means in 6 days both palm trees have a height of 44 cm. Palm tree B was taller until after 6 days, then Palm tree A was tallest.

Homework is continued ⇨