Bell Ringer - Find the intercepts of the linear equation.

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x	y
2	0
0	-4

$6x - 12 = 3(0)$

$6x - 12 = 0$

$6x = 12$

$x = 2$

$6(0) - 12 = 3y$
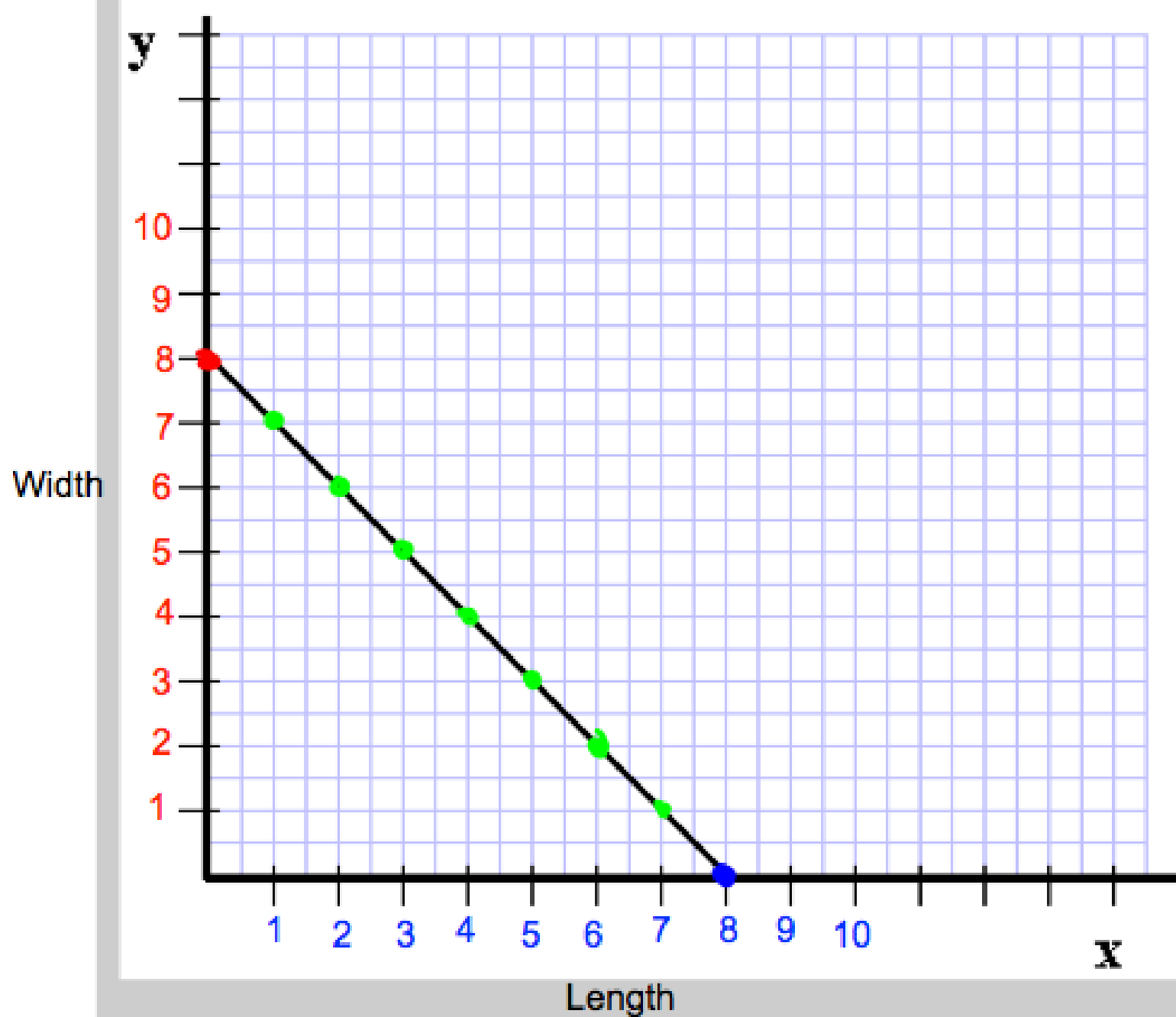
$-12 = 3y$

$-4 = y$

#35) A rectangle is x inches long and y inches wide and has a perimeter of 16 inches. The equation $2x + 2y = 16$ represents this situation.

a) Find the intercepts.

P = 16 in	y inches

x inches
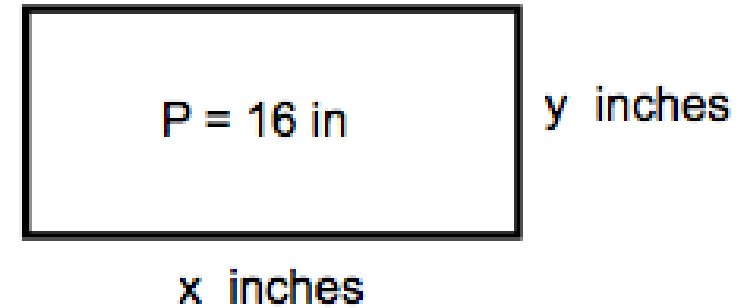
x	y
8	0
0	8

b) Graph the equation using the intercepts.

c) What are the possible dimensions for the rectangle?

(1 , 7)   1 by 7
(2 , 6)   2 by 6
(3 , 5)   3 by 5
(4 , 4)   4 by 4
(5 , 3)   5 by 3
(6 , 2)   6 by 2
(7 , 1)   7 by 1

d) Are the intercepts possible solutions?

No, the intercepts do not represent solutions. You can not have a rectangle, or any shape, that has a side length/width of 0. Only the points between the intercepts are possible solutions.
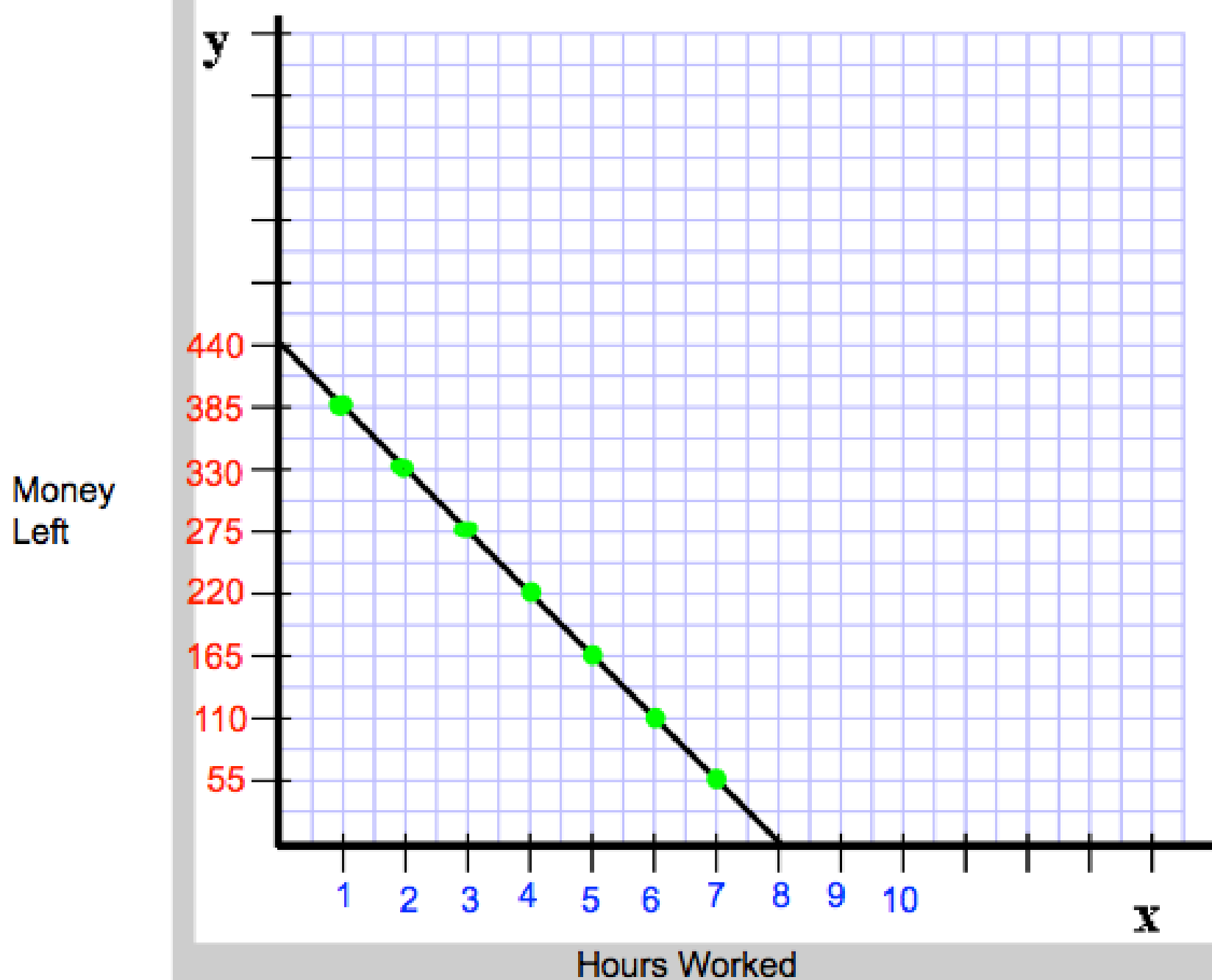
Mara has $440 to pay a painter to paint her bedroom. The painter charges $55 per hour. The equation y = 440 - 55x represents the amount of money left after *x* number of hours worked by the painter.

a) Find the intercepts.

X	Y
8	0
0	440

$$0 = 440 - 55x$$
$$+55x \qquad +55x$$
$$55x = 440$$
$$x = 8$$

b) Graph the function using the intercepts.

c) What options can Mara afford for painting her room?

(0 , 440)

(1 , 385)   1 hour and still have $385 left

(2 , 330)   2 hours and still have $330 left

(3 , 275)   3 hours and still have $275 left

(4 , 220)   4 hours and still have $220 left

(5 , 165)   5 hours and still have $165 left

(6 , 110)   6 hours and still have $110 left

(7 , 55)   7 hours and still have $55 left

(8 , 0)   8 hours and have nothing left

d) What do the intercepts represent in this situation?

x-intercept (8,0) represents the maximum amount of hours Mara can afford for the painter to work.

y-intercept (0,440) represents Mara's budget before the painter begins to work.