Bellwork Hon Alg 2 Monday, November 14, 2016

Find the exact solutions to each equation.

1. $4(x+3)^2 - 10 = 118$

2. $36x^2 + 30x = 24$

3. A farmer has 1500 feet of fencing to create a rectangular enclosure with a fenced divider in the middle to create two equally sized rectanglular pens for his livestock. Find the dimensions of this rectangular enclosure that will maximize the area of the two pens. Also, state the maximum area.

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1. $4(x+3)^2 - 10 = 118$

$+10 \quad +10$

$\frac{4(x+3)^2}{4} = \frac{128}{4}$

$\sqrt{(x+3)^2} = \sqrt{32}$

$x+3 = \pm\sqrt{32} = \pm 4\sqrt{2}$

$-3 \quad -3$

$x = -3 \pm 4\sqrt{2}$

2. $36x^2 + 30x = 24$

-24

$36x^2 + 30x - 24 = 0$

$6(6x^2 + 5x - 4) = 0$

-24, 8, -3, 5

	$3x$	$+4$
$2x$	$6x^2$	$+8x$
-1	$-3x$	-4

$6(3x+4)(2x-1) = 0$

$x = -4/3, 1/2$

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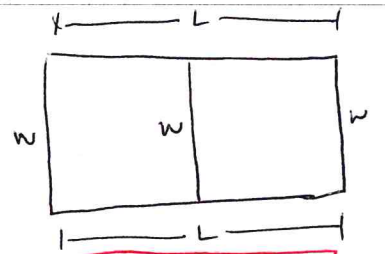

$1500 = 3w + 2L$

$L = \frac{1500 - 3w}{2}$

$L = 750 - 3/2\,w$

$A = L \cdot W$

$A = (750 - 3/2\,w)w$

$A = 750w - 3/2\,w^2$

max area occurs at the vertex

LOS: $w = \frac{-750}{2(-3/2)} = 250$ ft

$L = 750 - 3/2(250) = 375$ ft

Dimensions of $250_{w} \times 375_{L}$

Give max area of $93{,}750\ ft^2$