$$(x-2)(x+5) = 8$$
$$(x-2)(x+5) - 8 = 0$$
$$x^2 + 3x - 10 - 8 = 0$$
$$x^2 + 3x - 18 = 0$$
$$(x+6)(x-3) = 0$$
$$x = -6 \text{ OR } x = 3$$
$$x \in \{-6, 3\}$$

$$ABC = 0$$
$$A = 0 \text{ OR } B = 0 \text{ OR } C = 0$$
$$7(x-2)(x+11) = 0$$
$$x = 2 \text{ OR } x = -11$$

$(x-2)(x+11)$



(-11, 0)   (2, 0)
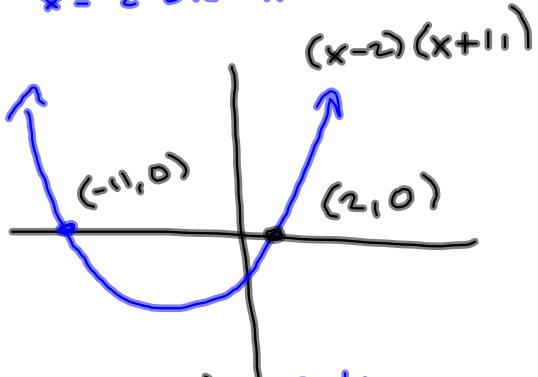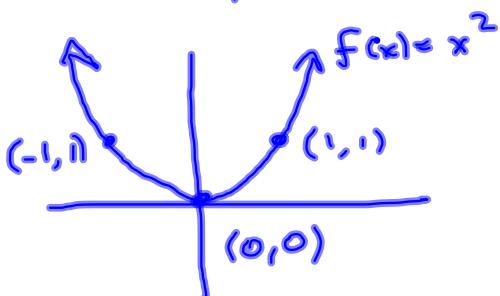
$$\frac{7(x-2)(x+11)}{7} = \frac{0}{7}$$

$$\Rightarrow (x-2)(x+11) = 0$$

$7(x-2)(x+11)$  7 times all y-values.



(-11, 0)   (2, 0)



$f(x) = x^2$

(-1, 1)   (1, 1)

(0, 0)

$$y = f(x)$$
$$y = 7f(x) = 7x^2$$

$= 0$



(-1, 7)   (1, 7)

(0, 0)

Oct 13-11:10 AM

**1**

12

10 − 2x

12 − 2x

x

x
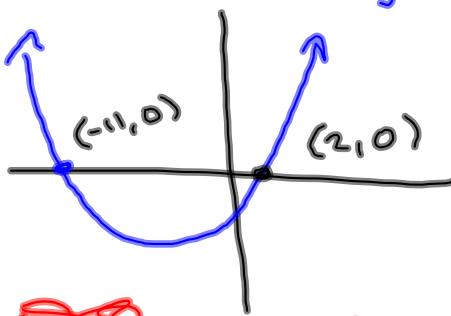
10
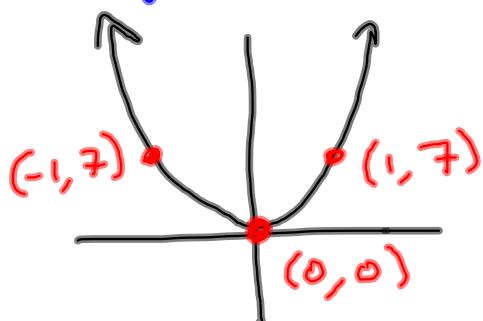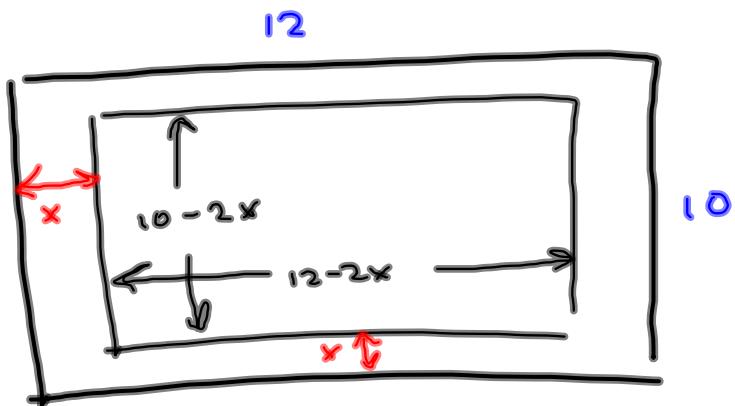
Area of frame =
    Area of outside − Area of inside.

The frame is AROUND, so $10 \times 12$ is
the inside dimensions. I was on my
way to this:

$$120 - (12-2x)(10-2x) = 104$$
$$\vdots$$
$$4x^2 - 44x + 104 = 0$$
$$x^2 - 11x + 26 = 0$$
Does not factor.

Oct 13-11:23 AM

$12 + 2x$

$12$

$10$

$x$

$x$
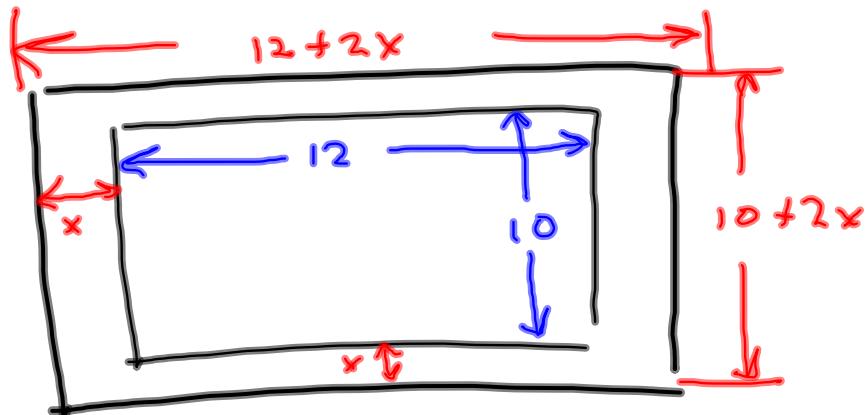
$10 + 2x$

Area of frame =
    Area of outside — Area of inside.

$$(12 + 2x)(10 + 2x) - (12)(10) = 104$$

$$120 + 24x + 20x + 4x^2 - 120 = 104$$

$$4x^2 + 44x - 104 = 0$$

$$4(x^2 + 11x - 26) = 0$$

$$x^2 + 11x - 26 = 0$$

$$x^2 + 13x - 2x - 26 = 0$$

$$x(x + 13) - 2(x + 13) = 0$$

$$(x + 13)(x - 2) = 0$$

$$x = -13 \quad \text{OR} \quad \boxed{x = 2}$$

Let $x$ = the width of the border (in feet)

$$\left(\overset{a}{5x} - \overset{b}{(3y+2)}\right)^2$$

$$(a-b)^2 = a^2 - 2ab + b^2$$

$$(a-b)(a-b) = a^2 - ab - ab + b^2 =$$

$$= (5x)^2 - 2(5x)(3y+2) + (3y+2)^2$$

$$= 5^2 x^2 - 10x(3y+2) + (3y)^2 + 2(3y)(2) + 2^2$$

$$(a+b)^2 = a^2 + 2ab + b^2$$

$$= 25x^2 - 30xy - 20x + 9y^2 + 12y + 4$$

$$(2x + (5y+1))^2 \qquad ((2x+5y) + 1)^2$$

$$(2x)^2 + 2(2x)(5y+1) + (5y+1)^2 \quad \overset{\text{(2)(5y)(1)}}{\longleftarrow}$$

$$= 4x^2 + 4x(5y+1) + 25y^2 + 10y + 1$$

$$= 4x^2 + 20xy + 4x + 25y^2 + 10y + 1$$

$$(2x+5y)^2 + 2(2x+5y)(1) + 1^2$$

$$= 4x^2 + 20xy + 25y^2 + 4x + 10y + 1$$