1.) Mr. Simpson decided to take up gardening and created a rectangular flower bed that measures 4 feet by 6 feet. He realized that it was too small and wanted to increase the length and width by the same amount to have a flower bed that was 48 square feet. What are the new dimensions of his flower bed?

$A = 48 \text{ ft}^2$

$A = l \cdot w \longrightarrow 48 = (4+x)(6+x)$

$4 + x = l$

$6 + x = w$

$48 = 24 + 4x + 6x + x^2$

$48 = x^2 + 10x + 24$

$-48 \qquad\qquad\qquad -48$

$0 = x^2 + 10x - 24$

$0 = (x+12)(x-2)$

$x = -12, 2$

$\dfrac{-24}{10} \quad -2, \quad 12$

6×8

2.) The length of a FedEx 25 kg box is 7 inches less than its height. The width of the box is 4 inches less than its height. If the volume of the box is 308 cubic inches, find the height of the box.

$V = l \cdot w \cdot h$

$V = 308$

$l = x - 7$

$w = x - 4$

$h = x$

$308 = (x-7)(x-4)(x)$

$308 = (x^2 - 4x - 7x + 28)(x)$

$308 = (x^2 - 11x + 28)(x)$

$308 = x^3 - 11x^2 + 28x$

$0 = (x^3 - 11x^2) + (28x - 308)$

$0 = x^2(x-11) + 28(x-11)$

$0 = (x^2 + 28)(x-11)$

$x^2 + 28 = 0$

$x^2 = -28$

$x = \pm\sqrt{-28}$

$x = \pm i\sqrt{28}$

$x - 11 = 0$

$x = 11$

11 in

Finish the rest of this packet!!! Ski

3.)

$$3$$

$$3 \quad x^{\bullet} \quad \frac{-2}{\wedge} \quad \frac{x}{3}$$

$$x+4 \quad 3$$

$$\} x+6$$

$$x+10$$