

1.2 #12

$$f(\text{chairs}) = \text{daily Cost}$$

know

$$f(100) = \$2,200$$

$$f(300) = \$4,800$$

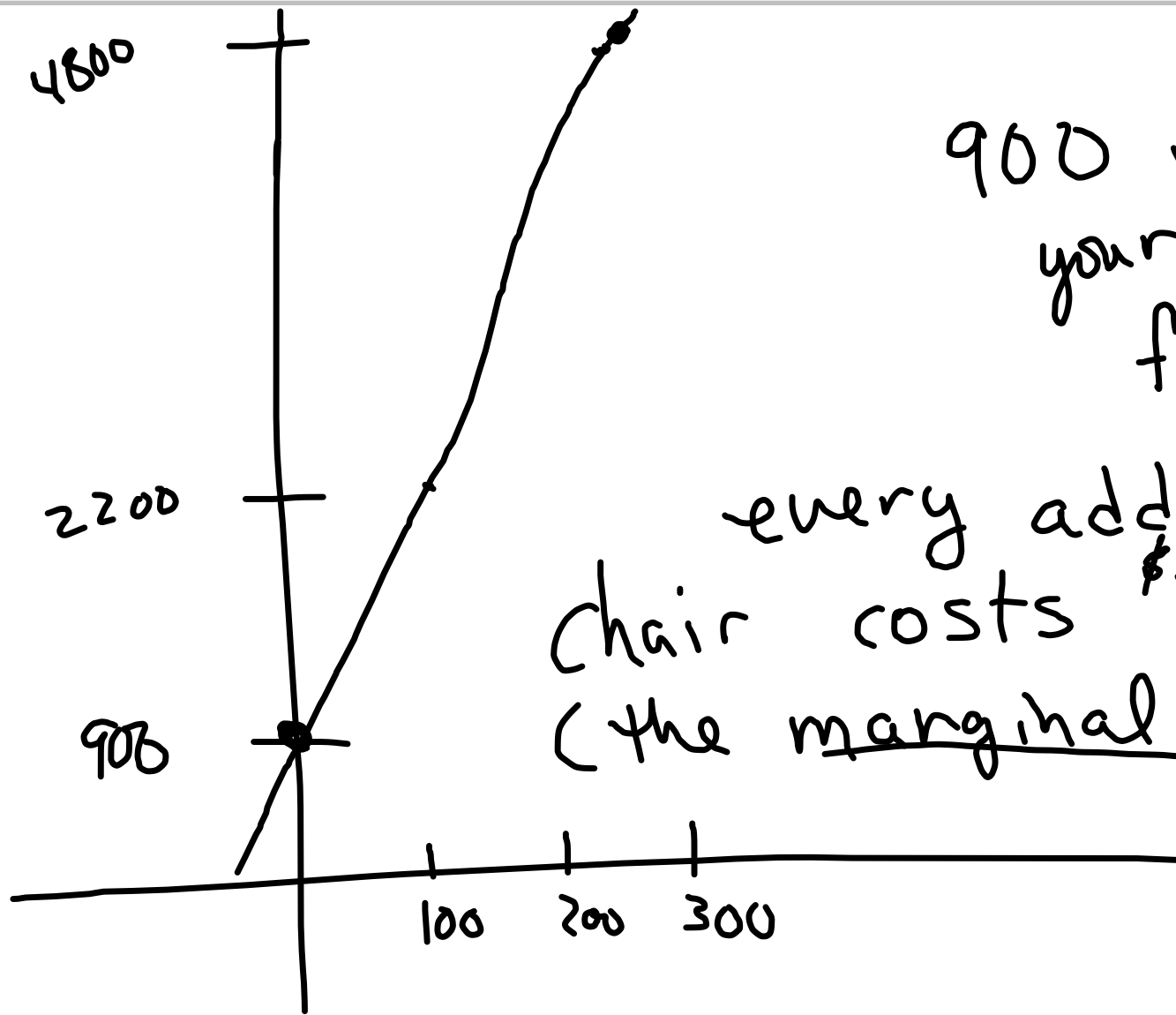
Assume linear, so a line
through the points $(100, 2200)$
and $(300, 4800)$

$$y - y_1 = \frac{y_2 - y_1}{x_2 - x_1} (x - x_1)$$

$$y - 2200 = \frac{4800 - 2200}{300 - 100} (x - 100)$$

$$y - 2200 = 13 (x - 100)$$

$$\text{or } y = 13x + 900$$



900 is your daily fixed costs
 every additional chair costs \$13 more (the marginal cost).

1.3 #12

we would know how to do

$$y = x^2 - 4x + 3$$

$$y = (x+2)^2 - 1$$

$$y = x^2 - 4x + (2)^2 - (2)^2 + 3$$

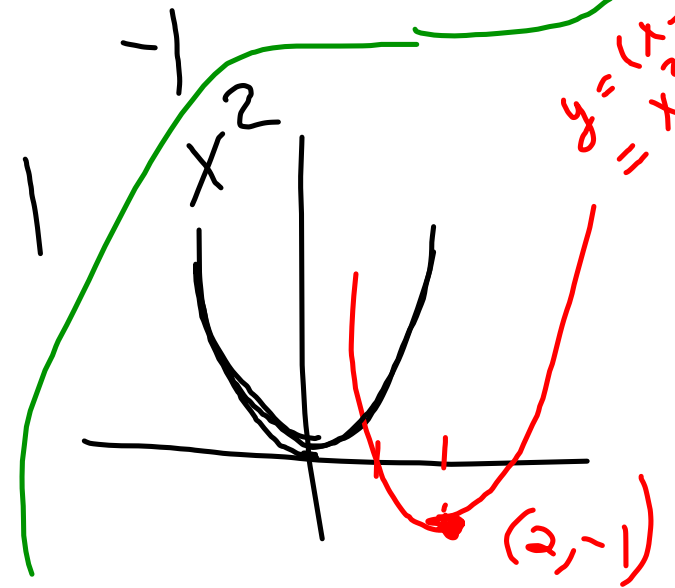
the number in front of x

take $\left(\frac{4}{2}\right)^2$

add + subtract it

$$y = x^2 - 4x + 4$$

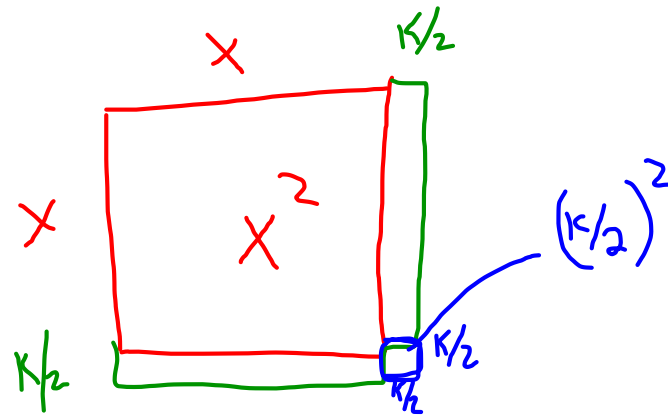
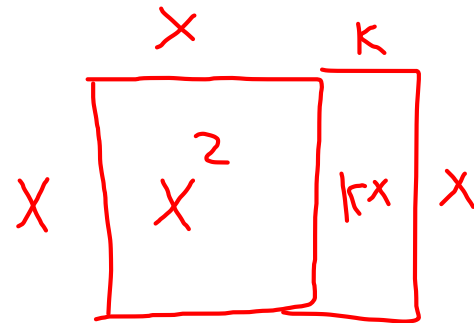
$$y = (x-2)^2 - 1$$



$$y = (x-2)^2 - 1$$
$$= x^2 - 4x + 3$$

$$x^2 + kx$$

$$x^2$$



$$x^2 + kx = \left(x + \frac{k}{2}\right)^2 - \left(\frac{k}{2}\right)^2$$