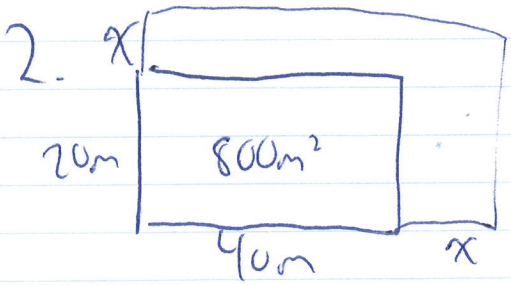
5.4

pg 293

12.



← my interpretation of what we are looking for.

$$1600 = (x+40)(x+20)$$

$$1600 = x^2 + 60x + 800$$

$$0 = x^2 + 60x - 800$$

$$x = \frac{-60 \pm \sqrt{60^2 - 4(1)(-800)}}{2}$$

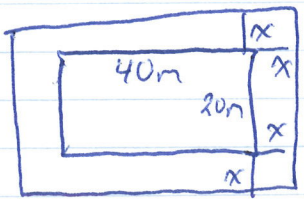
$$x = \frac{-60 \pm \sqrt{6800}}{2}$$

$x = 11.2\text{m}$ or $x = -71.2\text{m}$

Extend length and width by 11.2m.

OR

14



$1600 = (2x+20)(2x+40)$

$1600 = 4x^2 + 120x + 800$

$0 = 4x^2 + 120x - 800$

$0 = x^2 + 30x - 200$

$$x = \frac{-30 \pm \sqrt{30^2 - 4(1)(-200)}}{2}$$

$$x = \frac{-30 \pm \sqrt{1700}}{2}$$

$x \doteq 5.62$ or ~~$x \doteq -35.62$ m.~~

both 5.62 m and 11.2 m are acceptable answers.

$\times 2$