

p.192 4c) X-int:  $\sqrt{7}$ ,  $-\sqrt{7}$  pt  $(-5, 3)$

$$y = a(x - \sqrt{7})(x + \sqrt{7})$$

$$= a(x^2 - 7)$$

$$3 = a((-5)^2 - 7)$$

$$3 = a(25 - 7)$$

$$3 = a(18)$$

$$\frac{3}{18} = a$$

$$\frac{1}{6} = a$$

$$\therefore y = \frac{1}{6}(x - \sqrt{7})(x + \sqrt{7})$$

or  $y = \frac{1}{6}(x^2 - 7)$   
is the equation.

5a) v  $(-2, 5)$  pt  $(4, -8)$

$$y = a(x + 2)^2 + 5$$

$$-8 = a(4 + 2)^2 + 5$$

$$-8 = a(6)^2 + 5$$

$$-8 - 5 = 36a$$

$$-13 = 36a$$

$$-\frac{13}{36} = a$$

$$\therefore y = -\frac{13}{36}(x + 2)^2 + 5$$

is the equation.

5c) v  $(4, -5)$  pt  $(-1, -3)$

$$y = a(x - 4)^2 - 5$$

$$-3 = a((-1) - 4)^2 - 5$$

$$-3 = a(-5)^2 - 5$$

$$-3 + 5 = 25a$$

$$2 = 25a$$

$$\frac{2}{25} = a$$

$$\therefore y = \frac{2}{25}(x - 4)^2 - 5$$

is the equation.

p. 192 #6

$$f(x) = ax^2 - 6x - 7 \quad f(2) = 3$$

$$3 = a(2)^2 - 6(2) - 7$$

$$3 = 4a - 12 - 7$$

$$3 = 4a - 19$$

$$3 + 19 = 4a$$

$$22 = 4a$$

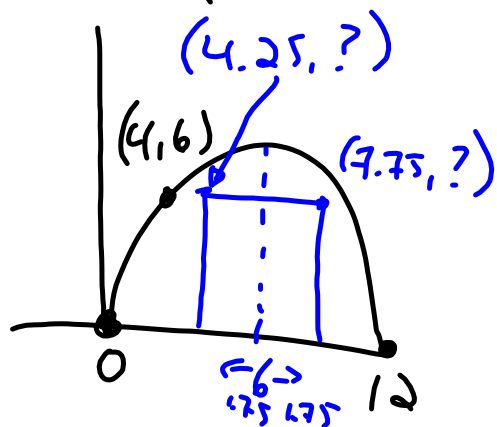
$$a = \frac{22}{4}$$
$$= \frac{11}{2}$$

$$\therefore f(x) = \frac{11}{2}x^2 - 6x - 7$$

in the equation.

$$\text{or } f(x) = 5.5x^2 - 6x - 7$$

p.192 #10



$\frac{3.5}{2} = 1.75$   
 at  $x = 4.25$   
 if  $y \geq 5$   
 the truck fits

$$y = ax(x-12)$$

$$6 = a(4)(4-12)$$

$$6 = a(4)(-8)$$

$$6 = -32a$$

$$\frac{6}{-32} = a$$

$$\therefore a = \frac{-3}{16}$$

$\therefore y = \frac{-3}{16}x(x-12)$   
 in the equation.

$$y = \frac{-3}{16}(4.25)(4.25-12)$$

$$= \frac{-3}{16}(4.25)(-7.75)$$

$$= 6.175$$

$\therefore$  the truck will fit since  $h(4.25) = 6.175 > 5$ .