

FUNCTIONS AND RELATIONS 111
QUADRATICS REVIEW ANSWERS

1. p.72 # 1

a. The sequence is arithmetic since there is a common difference between successive terms.

b. $t_n = 7n - 3$, $t_{50} = 347$

c. 144th term

2. p.38 - 39

$$\# 39a) -8(y+3) = (x-4)^2$$

$$b) y + 6.25 = (x + 0.5)^2$$

$$c) -\frac{5}{12}(y-1) = (x-\frac{1}{2})^2$$

$$40) -\frac{1}{2}(y-12) = (x-1)^2$$

$$42c) \frac{-49}{100}(y-100) = (x+3)^2$$

$$44a) -48(y-192) = (x-96)^2$$

$$45) \frac{-250}{3}(y-30) = (x-50)^2$$

The ball's height is 22.5 m when it is at a horizontal distance of 75 m.

3. a. cubic b. linear c. quadratic

4. b. $tn = -8n + 11$

c. $tn = -n^2 + 4n + 3$

5. $d = -4t^2 + 2t + 3$

6. a. $h = 15 \text{ m}$

b. $h = 16.8 \text{ m}$

c. $h = 20 \text{ m}$

d. $t = 1 \text{ s}$

7. price per t.v. = \$8200
number of t.v.'s per week = 14
8. There is a *minimum* possible product of -81
if the numbers are 9 and -9.
9. $x = 31.6$ m (so $3x = 94.7$ m and $4x = 126.3$ m)
 $y = 142$ m

10.

standard form	$y = -\frac{1}{2}(x + 4)^2 + 2$
general form	$y = -\frac{1}{2}x^2 - 4x - 6$
mapping rule	$(x, y) \rightarrow (x - 4, -\frac{1}{2}y + 2)$
direction of opening	downward
stretch factor	$\frac{1}{2}$
vertex	$(-4, 2)$
axis of symmetry	$x = -4$
y-intercept	-6
domain	$\{x \mid x \in \mathbb{R}\}$
range	$\{y \mid y \leq 2, y \in \mathbb{R}\}$

11.

