

1 ANS: 3 REF: 061412ai

2 ANS: 4 REF: 011503ai

3 ANS: 1

$$2x^2 - 4x - 6 = 0$$

$$2(x^2 - 2x - 3) = 0$$

$$2(x - 3)(x + 1) = 0$$

$$x = 3, -1$$

REF: 011609ai

4 ANS: 4

$$3x^2 - 3x - 6 = 0$$

$$3(x^2 - x - 2) = 0$$

$$3(x - 2)(x + 1) = 0$$

$$x = 2, -1$$

REF: 081513ai

5 ANS:

$$8m^2 + 20m - 12 = 0$$

$$4(2m^2 + 5m - 3) = 0$$

$$(2m - 1)(m + 3) = 0$$

$$m = \frac{1}{2}, -3$$

REF: fall1305ai

6 ANS:

$$x^2 + 10x + 24 = (x + 4)(x + 6) = (x + 6)(x + 4). \quad 6 \text{ and } 4$$

REF: 081425ai

1 ANS: 4 REF: spr1304ai

2 ANS: 2 REF: 011611ai

3 ANS:

$$34 = l \left(\frac{1}{2} l \right)$$

$$68 = l^2$$

$$8.2 \approx l$$

$$4.1 \approx w$$

REF: 061532ai

4 ANS:

$(2x + 16)(2x + 12) = 396$. The length, $2x + 16$, and the width, $2x + 12$, are multiplied and set equal to the area.

$$(2x + 16)(2x + 12) = 396$$

$$4x^2 + 24x + 32x + 192 = 396$$

$$4x^2 + 56x - 204 = 0$$

$$x^2 + 14x - 51 = 0$$

$$(x + 17)(x - 3) = 0$$

$$x = 3 = \text{width}$$

REF: 061434ai

5 ANS:

$$108 = x(24 - x) \quad 18 \times 6$$

$$108 = 24x - x^2$$

$$x^2 - 24x + 108 = 0$$

$$(x - 18)(x - 6) = 0$$

$$x = 18, 6$$

REF: 011636ai

6 ANS:

$$w(w + 40) = 6000$$

$$w^2 + 40w - 6000 = 0$$

$$(w + 100)(w - 60) = 0$$

$$w = 60, l = 100$$

REF: 081436ai

7 ANS:

$(x - 3)(2x) = 1.25x^2$ Because the original garden is a square, x^2 represents the original area, $x - 3$ represents the side decreased by 3 meters, $2x$ represents the doubled side, and $1.25x^2$ represents the new garden with an area 25% larger. $(x - 3)(2x) = 1.25x^2$ $1.25(8)^2 = 80$

$$2x^2 - 6x = 1.25x^2$$

$$.75x^2 - 6x = 0$$

$$x^2 - 8x = 0$$

$$x(x - 8) = 0$$

$$x = 8$$

REF: 011537ai

8 ANS:

$(2x + 8)(2x + 6) = 100$ The frame has two parts added to each side, so $2x$ must be added to the length and

$$4x^2 + 28x + 48 = 100$$

$$x^2 + 7x - 13 = 0$$

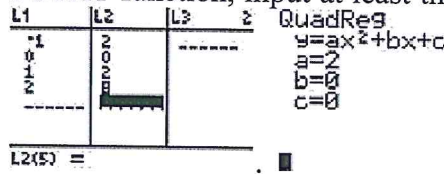
width. Multiply length and width to find area and set equal to 100.

$$x = \frac{-7 \pm \sqrt{7^2 - 4(1)(-13)}}{2(1)} = \frac{-7 + \sqrt{101}}{2} \approx 1.5$$

REF: 081537ai

- 1 ANS: 2 REF: fall0926a2
- 2 ANS: 1 REF: 081015ia
- 3 ANS: 4 REF: 061503ia
- 4 ANS: 1 REF: 081417ai
- 5 ANS: 2 REF: 081414ia
- 6 ANS: 2 REF: 011512ai
- 7 ANS: 4 REF: 060829ia
- 8 ANS: 2 REF: 061113ia
- 9 ANS: 2 REF: 081218ia
- 10 ANS: 2 REF: 011330ia
- 11 ANS: 2

Since the parabola is cupped up, $a > 0$, eliminating (1) and (3). The point (2, 8) satisfies only $y = 2x^2$. You can also use a graphing calculator's STAT function, input at least three ordered pairs, and calculate



the quadratic regression line of best fit.

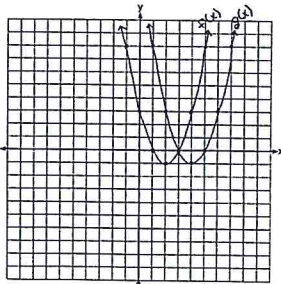
REF: 060404b

- 12 ANS: 4 REF: 081322ia
- 13 ANS:



REF: 061435a2

- 14 ANS:



(4, -1). $f(x - 2)$ is a horizontal shift two units to the right.

REF: 061428ai