

ANSWER PRESENTATION TOOL

Algebra 2 - Student Edit

2

4 - Practice

1-19

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1. Use the vertex and the point to solve for a in vertex form.

$$y = a(x - h)^2 + k$$

$$3 = a(-1 + 2)^2 + 6$$

$$-3 = a$$

So, the equation of the parabola is $y = -3(x + 2)^2 + 6$.

3. Use the vertex and the point to solve for a in vertex form.

$$y = a(x - h)^2 + k$$

$$8 = a(13 - 3)^2 + 2$$

$$6 = 100a$$

$$a = \frac{6}{100}$$

So, the equation of the parabola is $y = \frac{6}{100}(x - 3)^2 + 2$.

5. Use the vertex and the point to solve for a in vertex form.

$$y = a(x - h)^2 + k$$

$$-24 = a(0 + 6)^2 - 12$$

$$-12 = 36a$$

$$a = -\frac{1}{3}$$

So, the equation of the parabola is $y = -\frac{1}{3}(x + 6)^2 - 12$.

7. Use the x -intercepts and the point to solve for a in intercept form.

$$y = a(x - p)(x - q)$$

$$4 = a(3 - 4)(3 - 2)$$

$$4 = -1a$$

$$a = -4$$

So, the equation of the parabola is $y = -4(x - 2)(x - 4)$.

9. Use the x -intercepts and the point to solve for a in intercept form.

$$y = a(x - p)(x - q)$$

$$4 = a(14 - 12)(14 - (-6))$$

$$4 = 40a$$

$$a = \frac{1}{10}$$

So, the equation of the parabola is $y = \frac{1}{10}(x - 12)(x + 6)$.

11. Use the x -intercepts and the point to solve for a in intercept form.

$$y = a(x - p)(x - q)$$

$$72 = a(-18 + 16)(-18 + 2)$$

$$72 = 32a$$

$$a = \frac{9}{4}$$

So, the equation of the parabola is $y = \frac{9}{4}(x + 16)(x + 2)$.

13. When the x -intercepts and an additional point is known, use the intercept form to write the equation of the parabola, and when the vertex and an additional point is known, use the vertex form to write the equation of the parabola.

15. The vertex of the parabola is (3, 150) and an additional point is (1, 86). Use the vertex and the point to solve for a in vertex form.

$$y = a(x - h)^2 + k$$

$$86 = a(1 - 3)^2 + 150$$

$$86 = 4a + 150$$

$$-64 = 4a$$

$$-16 = a$$

So, the equation of the parabola is $y = -16(x - 3)^2 + 150$.

17. The x -intercepts of the parabola are 0 and 4 and an additional point is (3, 2.25). Use the x -intercepts and the point to solve for a in vertex form.

$$y = a(x - p)(x - q)$$

$$2.25 = a(3 + 0)(3 - 4)$$

$$2.25 = -3a$$

$$a = -0.75$$

So, the equation of the parabola is $y = -0.75x(x - 4)$.

19. The x -intercepts were substituted incorrectly.

$$y = a(x - p)(x - q)$$

$$4 = a(3 + 1)(3 - 2)$$

$$4 = 4a$$

$$1 = a$$

The equation of the parabola is $y = (x + 1)(x - 2)$.

