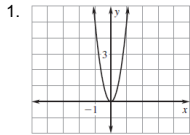
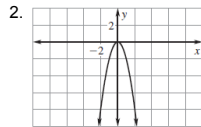


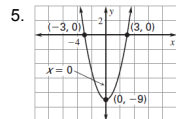
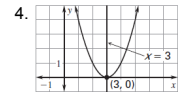
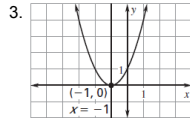
**Advanced Algebra Unit 3.1 HW Answers**



same axis of symmetry and vertex, opens up, and is narrower

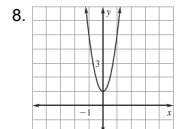


same axis of symmetry and vertex, opens down, and is narrower

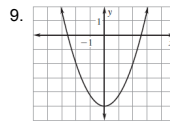


6. maximum value; -1

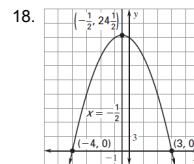
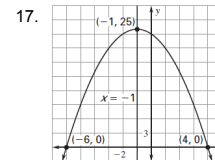
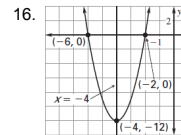
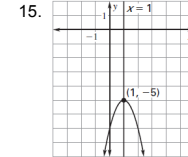
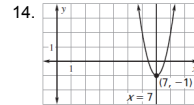
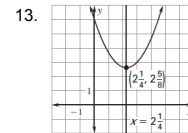
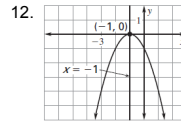
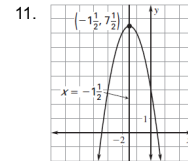
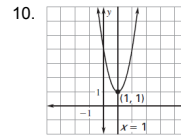
7. minimum; -4



same axis of symmetry, vertex is shifted up 1 unit, opens up, and is narrower



9. same axis of symmetry, vertex is shifted down 5 units, opens up, and is wider



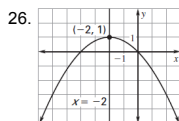
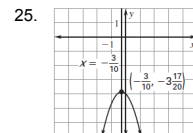
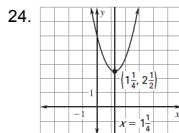
19. maximum value; 22

20. minimum value; -2

21. maximum value; 729

22. minimum value; -450

23. about 105 m



27.

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

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

$$= ax^2 - 2ahx + ah^2 + k,$$

$$x = -\frac{b}{2a} = \frac{2ah}{2a} = h;$$

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

$$= a(x^2 - (p + q)x + pq)$$

$$= ax^2 - a(p + q)x + apq,$$

$$x = -\frac{b}{2a} = \frac{a(p + q)}{2a} = \frac{p + q}{2}$$

28.  $y = -\frac{5}{1089}(x - 33) + 5$ ;  
changing the value of  $a$  makes the path wider or narrower, changing the value of  $h$  affects the horizontal distance, and changing the value of  $k$  affects the vertical distance of the flight path.