

## SM2H Graphing Quadratics Test Review Answer Key

1.

form: Standard

vertex:  $(-2, -1)$

x-int(s):  $(-3, 0); (-1, 0)$

y-int:  $(0, 3)$

2.

form: vertex

vertex:  $(-3, -2)$

x-int(s):  $(-3 + \sqrt{2}, 0); (-3 - \sqrt{2}, 0)$

y-int:  $(0, 7)$

3.

form: standard

vertex:  $(-1, -4)$

x-int(s):  $(0, 0); (-2, 0)$

y-int:  $(0, 0)$

4.

form: standard

vertex:  $(0, 0)$

x-int(s):  $(0, 0)$

y-int:  $(0, 0)$

5.

form: standard

vertex:  $(2, -4)$

x-int(s): none

y-int:  $(0, -8)$

6.

form: factored

vertex:  $(3/4, -49/8)$

x-int(s):  $(-1, 0); (5/2, 0)$

y-int:  $(0, -5)$

7.

form: vertex

vertex:  $(-4, -2)$

x-int(s):  $(-3, 0); (-5, 0)$

y-int:  $(0, 30)$

8.

form: factored

vertex:  $(3/2, 121/4)$

x-int(s):  $(-4, 0); (7, 0)$

y-int:  $(0, 28)$

9.

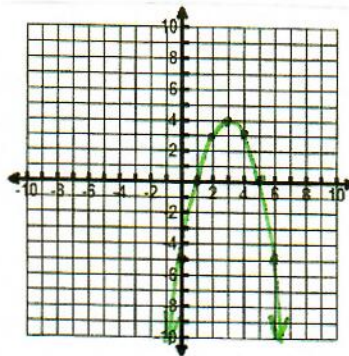
vertex:  $(3, 4)$

axis of symmetry:  $x = 3$

direction of opening: down

domain:  $(-\infty, \infty)$

range:  $(-\infty, 4]$



10.

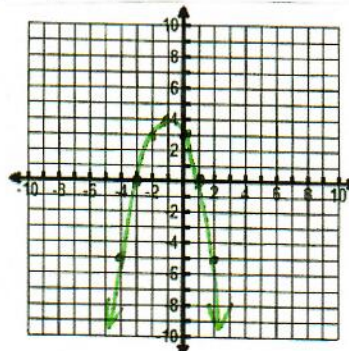
vertex:  $(-1, 4)$

axis of symmetry:  $x = -1$

direction of opening: down

domain:  $(-\infty, \infty)$

range:  $(-\infty, 4]$



11.

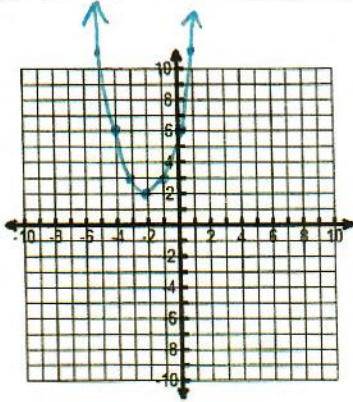
vertex:  $(-2, 2)$

axis of symmetry:  $x = -2$

direction of opening: up

domain:  $(-\infty, \infty)$

range:  $[2, \infty)$



12.

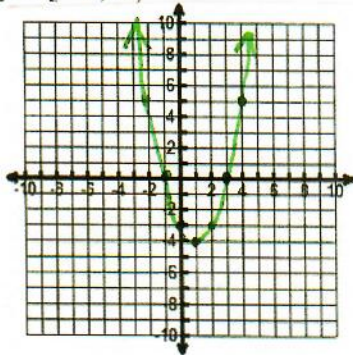
vertex:  $(1, -4)$

axis of symmetry:  $x = 1$

direction of opening: up

domain:  $(-\infty, \infty)$

range:  $[-4, \infty)$



13.

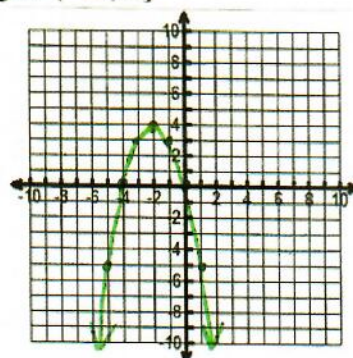
vertex:  $(-2, 4)$

axis of symmetry:  $x = -2$

direction of opening: down

domain:  $(-\infty, \infty)$

range:  $(-\infty, 4]$



14.

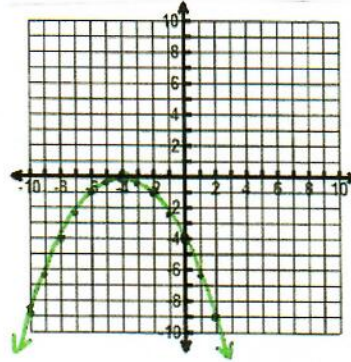
vertex:  $(-4, 0)$

axis of symmetry:  $x = -4$

direction of opening: down

domain:  $(-\infty, \infty)$

range:  $(-\infty, 0]$



15.

vertex:  $(1, 9)$

axis of symmetry:  $x = 1$

direction of opening: down

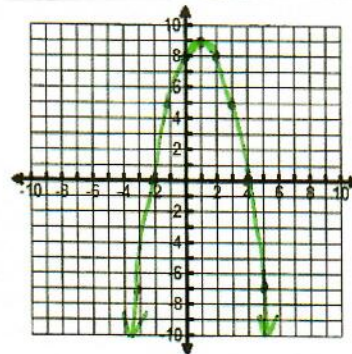
maximum

maximum value: 9

y-intercept:  $(0, 8)$

zeros:  $-2, 4$

x-intercept(s):  $(-2, 0); (4, 0)$





16.

vertex:  $(-3, -6)$

axis of symmetry:  $x = -3$

direction of opening: up

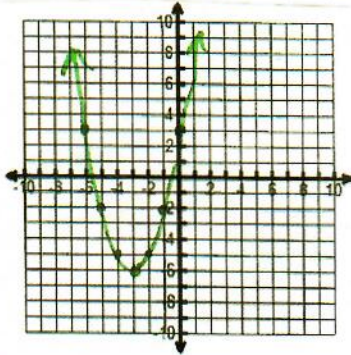
minimum

minimum value: 6

y-intercept:  $(0, 3)$

zeros:  $-3 \pm \sqrt{6}$

x-intercepts:  $(-3 + \sqrt{6}, 0); (-3 - \sqrt{6}, 0)$   
or  $(-0.55, 0); (-5.45, 0)$



17.

vertex:  $(1, 2)$

axis of symmetry:  $x = 1$

direction of opening: up

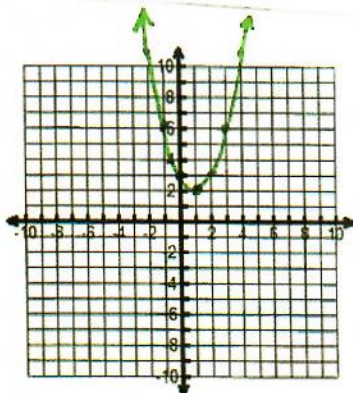
minimum

minimum value: 2

y-intercept:  $(0, 3)$

zeros:  $1 \pm i\sqrt{2}$

x-intercepts: none



18.  $y = -\frac{1}{3}(x+9)(x-4)$

19.  $y = \frac{3}{2}(x+12)^2 - 3$

20.  $y = \frac{1}{2}(x - \sqrt{3})(x + \sqrt{3})$

21.  $y = -\frac{1}{3}x^2 + 2x + \frac{40}{3}$

22.

a. 80 feet

b. ~~80~~ feet

c. 2 seconds

d. 144 feet

e. 1.06 seconds and 2.94 seconds

f. 5 seconds

23.  $(-\infty, -7) \cup (8, \infty)$

24.  $(-\infty, -5] \cup [2, \infty)$

25.  $(-\infty, -5] \cup [\frac{3}{4}, \infty)$

26.  $(-2, 1)$

27.  $(-\infty, 0] \cup [10, \infty)$

28.  $(-\infty, -\frac{1}{5}) \cup (2, \infty)$

29.  $[-3, 3]$

30.  $(-\infty, -5) \cup (5, \infty)$

31.  $(-1, 3); (2, 6)$

32.  $(0, -3); (1, -2)$