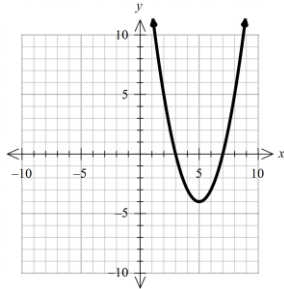
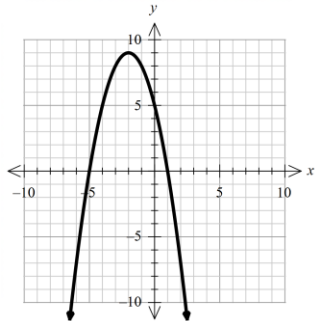


SM2H 4.2 HW Answers

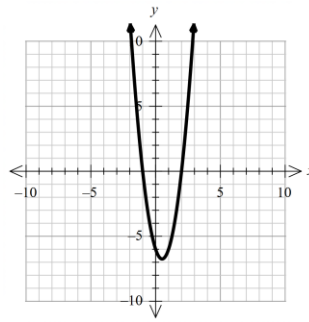
- $x = 0, \frac{5}{7}$
- $r = 7, 3$
- B
- C
- A
- x-int: $(3, 0)$ & $(7, 0)$
y-int: $(0, 21)$
vertex: $(5, -4)$
axis of symmetry: $x = 5$
direction of opening: up
domain: $(-\infty, \infty)$
range: $[-4, \infty)$



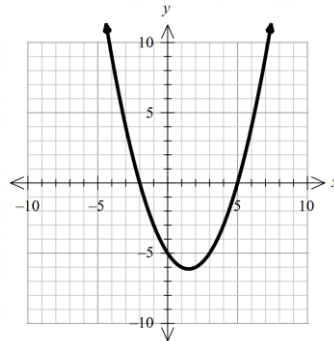
- x-int: $(-5, 0)$ & $(1, 0)$
y-int: $(0, 5)$
vertex: $(-2, 9)$
axis of symmetry: $x = -2$
direction of opening: down
domain: $(-\infty, \infty)$
range: $(-\infty, 9]$



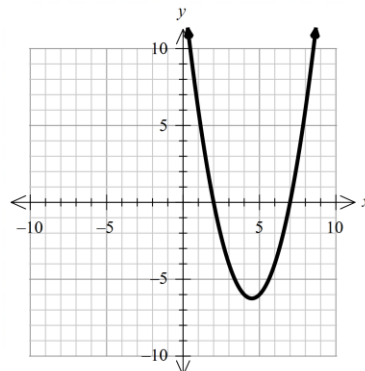
- x-int: $(-1, 0)$ & $(2, 0)$
y-int: $(0, -6)$
vertex: $(\frac{1}{2}, -\frac{27}{4})$
axis of symmetry: $x = \frac{1}{2}$
direction of opening: up
domain: $(-\infty, \infty)$
range: $[-\frac{27}{4}, \infty)$



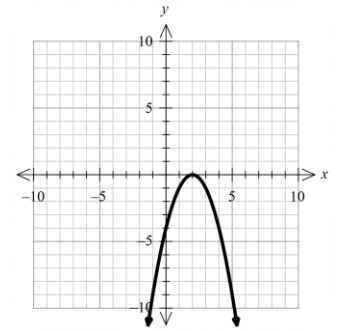
- x-int: $(-2, 0)$ & $(5, 0)$
y-int: $(0, -5)$
vertex: $(\frac{3}{2}, -\frac{49}{8})$
axis of symmetry: $x = \frac{3}{2}$
direction of opening: up
domain: $(-\infty, \infty)$
range: $[-\frac{49}{8}, \infty)$



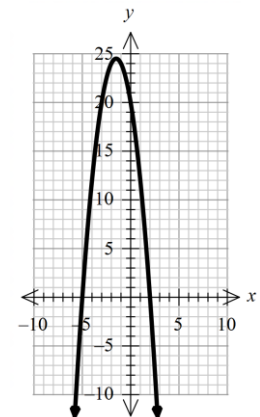
- x-int: $(2, 0)$ & $(7, 0)$
y-int: $(0, 14)$
vertex: $(\frac{9}{2}, -\frac{25}{4})$
axis of symmetry: $x = \frac{9}{2}$
direction of opening: up
domain: $(-\infty, \infty)$
range: $[-\frac{25}{4}, \infty)$



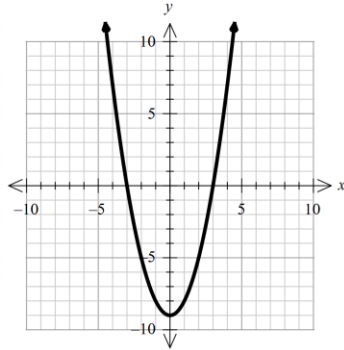
- x-int: $(2, 0)$
y-int: $(0, -4)$
vertex: $(2, 0)$
axis of symmetry: $x = 2$
direction of opening: down
domain: $(-\infty, \infty)$
range: $(-\infty, 0]$



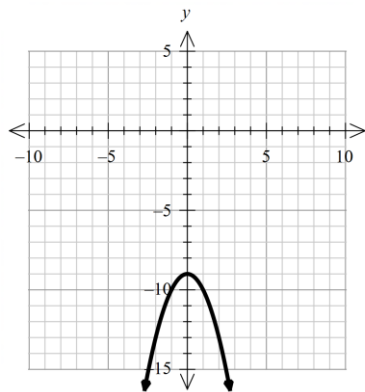
- x-int: $(-5, 0)$ & $(2, 0)$
y-int: $(0, 20)$
vertex: $(-\frac{3}{2}, \frac{49}{2})$
axis of symmetry: $x = -\frac{3}{2}$
direction of opening: down
domain: $(-\infty, \infty)$
range: $(-\infty, \frac{49}{2}]$



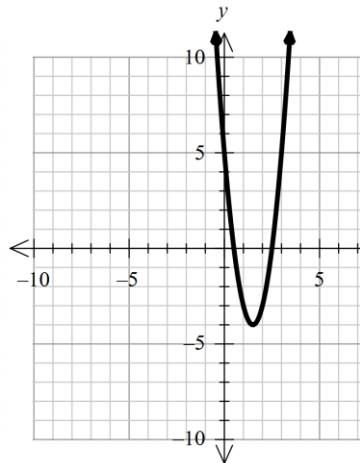
13. x-int: $(3, 0)$ & $(-3, 0)$
 y-int: $(0, -9)$
 vertex: $(0, -9)$
 axis of symmetry: $x = 0$
 direction of opening: up
 domain: $(-\infty, \infty)$
 range: $[-9, \infty)$



14. x-int: none
 y-int: $(0, -9)$
 vertex: $(0, -9)$
 axis of symmetry: $x = 0$
 direction of opening: down
 domain: $(-\infty, \infty)$
 range: $(-\infty, -9]$



15. x-int: $(\frac{5}{2}, 0)$ & $(\frac{1}{2}, 0)$
 y-int: $(0, 5)$
 vertex: $(\frac{3}{2}, -4)$
 axis of symmetry: $x = \frac{3}{2}$
 direction of opening: up
 domain: $(-\infty, \infty)$
 range: $[-4, \infty)$



16. 12 seconds
 17. 5 seconds
 18. $x = \frac{40}{3}$
 19. $x = \pm 3\sqrt{5}$
 20. $x = -\frac{5}{2}$
 21. $x = 6 \pm \sqrt{13}$
 22. $x = 3 \pm \sqrt{15}$