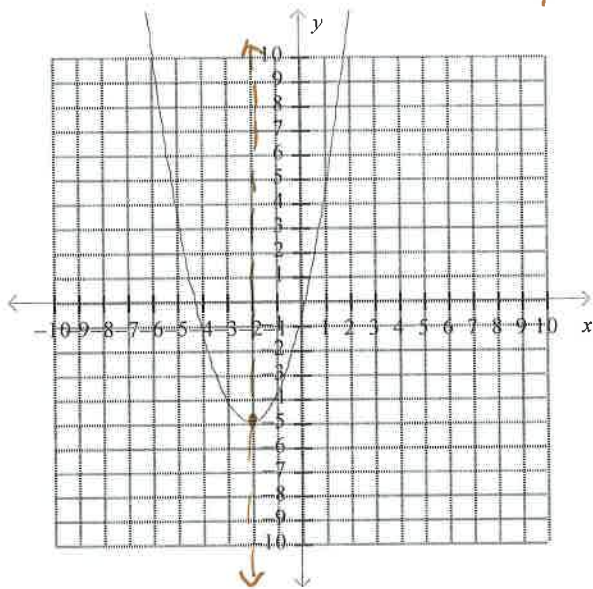
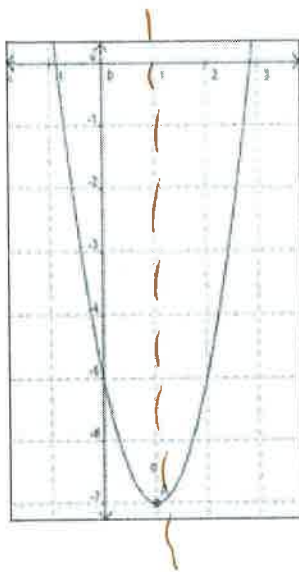


13a.) Determine the axis of symmetry. Equation b.) Determine the axis of symmetry.



$$x = -2$$



$$x = 1$$

14a.) A baseball is thrown straight up in the air with an initial velocity of 28 feet per second. Its height, h , in feet after t seconds is given by the function $h(t) = -16t^2 + 28t + 6$. What is the baseball's maximum height?

Use calculator or use formula find vertex

$$(0.87, 18.25)$$

↑ height

$$x = \frac{-b}{2a} = \frac{-28}{2(-16)} = 0.875$$

$$h(0.875) = -16(0.875)^2 + 28(0.875) + 6 = 18.25 \text{ feet}$$

b.) A soccer ball is juggled in the air with an initial velocity of 40 feet per second. Its height, h , in feet after t seconds is given by the function $h(t) = -16t^2 + 40t + 3$. What is the soccer ball's maximum height?

calc: $(1.25, 28)$ ↑ height

28 feet

Formula:

$$x = \frac{-40}{2(-16)} = 1.25$$

$$h(1.25) = -16(1.25)^2 + 40(1.25) + 3 = 28 \text{ feet}$$

15a.) A tennis ball is propelled from the face of a racket that is 3 feet above the ground with an initial velocity of 40 ft/sec.

I.) Substitute the values into the vertical motion formula: $h(t) = -16t^2 + vt + c$.

$$h(t) = -16t^2 + 40t + 3$$

II.) At what time is the tennis ball at its highest point?

calc:

$$(1.25, 28)$$

↓ time

$$1.25 \text{ sec}$$

max (vertex)

Formula

$$x = \frac{-40}{2(-16)}$$

$$= 1.25 \text{ sec}$$