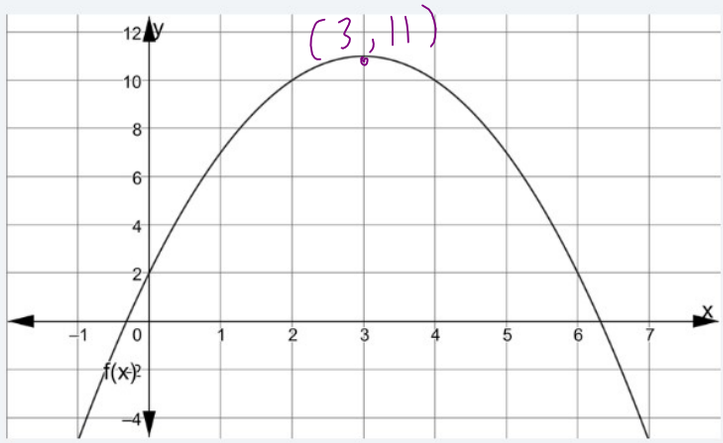
Section 5 topics 1-6 review

Here is the graph of the function fx.

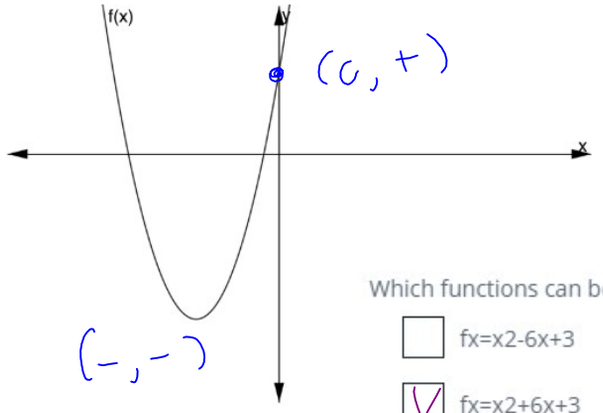


A.O.S $\frac{-b}{2a}$

Which functions have a larger maximum than fx? Select all that apply.

- [ ] ux= -x2+2x+2 $-2/-2 = 1 \quad -(1)^2+2(1)+2 = -1+2+2 = 3 \quad (1,3)$
- [ ] gx=-x2+4x+6 $-4/-2 = 2 \quad -(2)^2+4(2)+6 = -4+8+6 = 10 \quad (2,10)$
- [X] hx=-x2+8x+3 $-8/-2 = 4 \quad -(4)^2+8(4)+3 = -16+32+3 = 19$
- [X] tx=-2x2+3x+10 $-3/-4 = 0.75 = -2(0.75)^2+3(0.75)+10 = -1.125+2.25+10 = 11.125$
- [X] kx=-2x2+7x+14 $-7/-4 = 1.75$

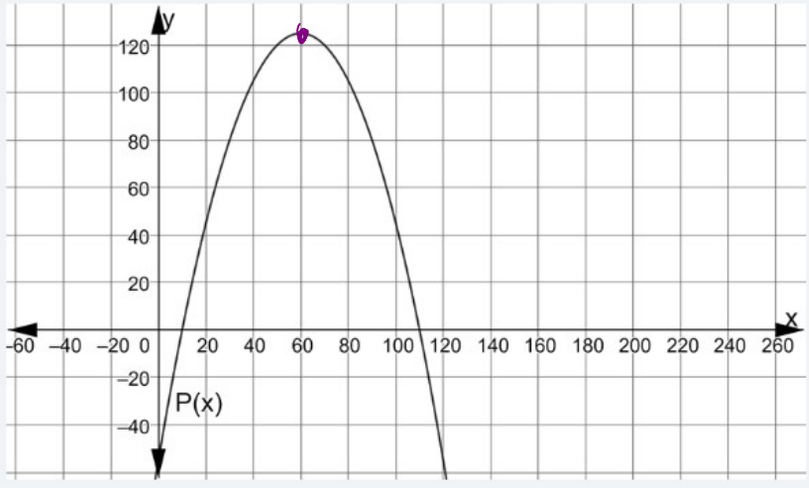
Here is the graph of fx.



Which functions can be representations of the graph of fx? Select all that apply.

- [ ] fx=x2-6x+3
- [X] fx=x2+6x+3
- [ ] ~~fx=x2+6x-3~~
- [X] fx=x+18x+5
- [ ] fx=x2-18x+5
- [ ] ~~fx=x2+18x-5~~

The graph of the function P(x) models the amount of money a business will make for producing and selling x packs of dehydrated mangoes.



$x = \frac{-b}{2a}$

The function,

A Px=-0.050x2+6x-55

B Px=-0.050x2-6x-55

C ~~Px=0.050x2-6x-55~~

D ~~Px=0.050x2+6x-55~~

can be used to find the number of packs,

A 10

B 60

C 110

they will have to sell for maximum profit.

Isla wrote a quadratic function in vertex form. She challenged her friend, Milo, to guess the function based on clues that she provides. The clues are as follows:

- My function has a maximum point at (2, 8).
- My function passes through the origin.
- My function has an additional x-intercept at (4, 0).

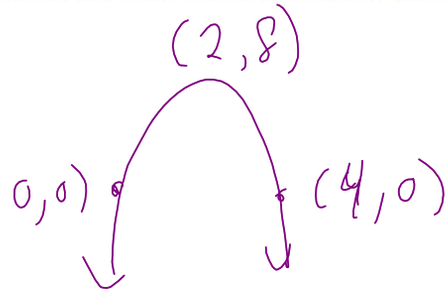
Which function should be Milo's guess?

A ~~fx=-x-22+8~~

B ~~fx=2x-22+8~~

C fx=-x-22+8

fx=-2x-22+8



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

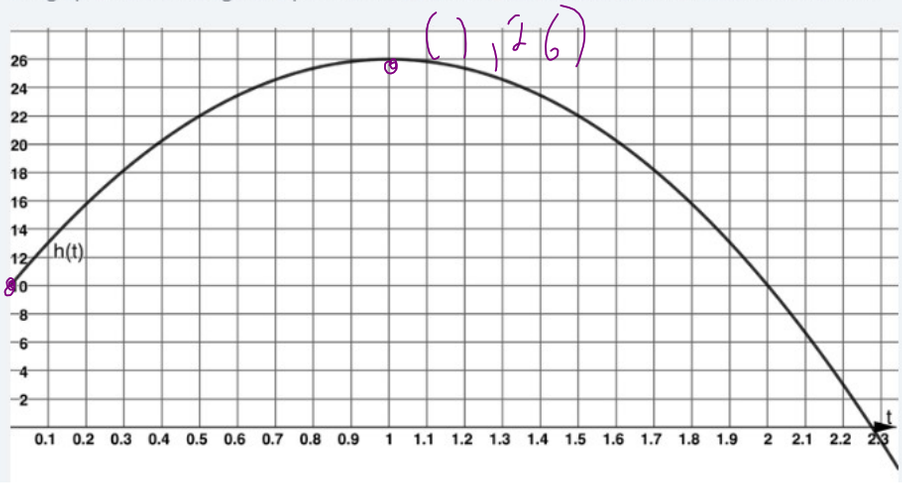
$0 = a(0-2)^2 + 8$

$0 = 4a + 8$

$-8 = 4a$

$a = -2$

The graph shows the height of a pebble above a lake, ht, as a function of time measured in seconds.



The function modeled in the graph is

(A) ht=-16t2-64+12

(B) ht=-16t2-32+10

(C) ht=-16t2+64+26

Factoring the function gives the zeros of the function, where

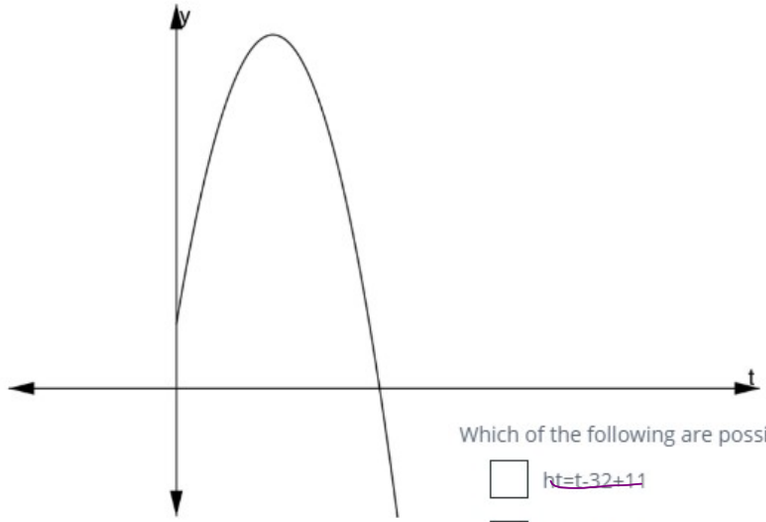
(A) x=0

(B) x=1

(C) x≈2.3

is equivalent to the time when the pebble hits the surface of the water.

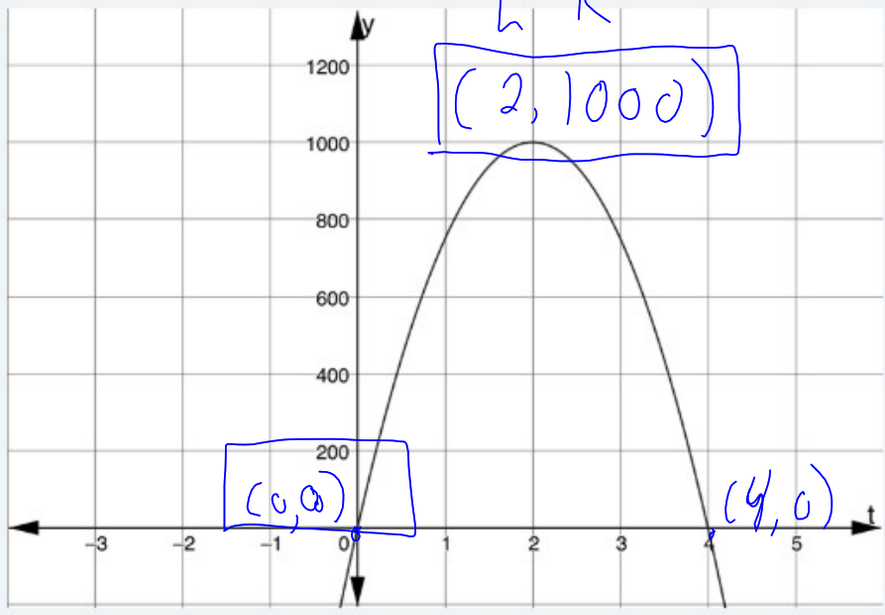
The movement of a bird is shown in the graph, where htis the bird's height in meters after t seconds.



Which of the following are possible functions of the bird's flight? Select all that apply.

- ~~ht=t-32+11~~
- ~~ht=t-52+10~~
- ht=-t-3+11
- ht=-t-5+10
- ht=-t-32+11
- ht=-t-52+10

The movement of fireworks launched from a ship at sea is shown on the graph, where htis height in feet after t seconds.



h k

(2, 1000)

(0, 0)

(4, 0)

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

$0 = a(0-2)^2 + 1000$

$0 = 4a + 1000$

$-1000 = 4a$

$a = -250$

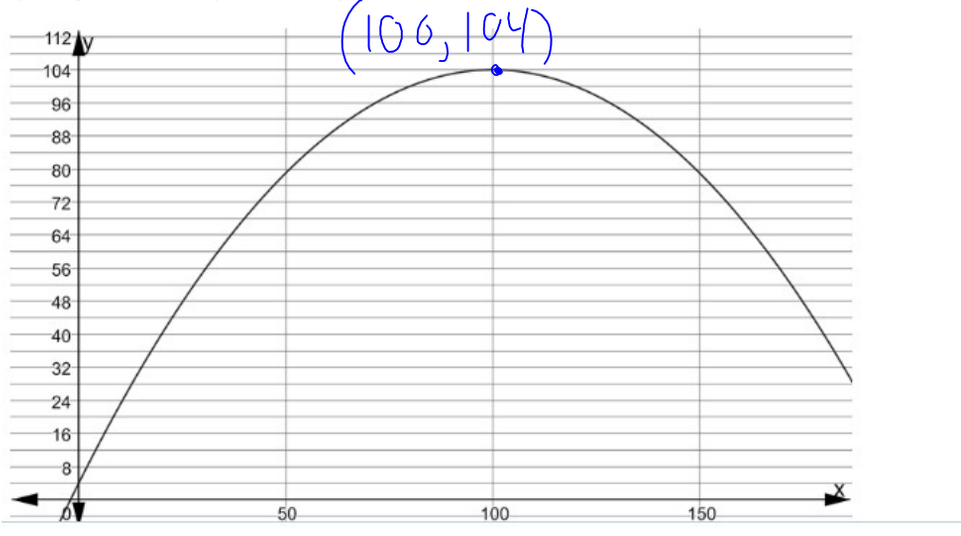
$y = -250(x-2)^2 + 1000$

$y = -250(x^2 - 4x + 4) + 1000$

$y = -250x^2 + 1000x - 1000 + 1000$

$y = -250x^2 + 1000x$

The graph represents the projected profit function of Green & Clean Car Manufacturer, where xrepres
quantity sold and fxrepresents the profit in millions of dollars.



The vertex form of the graph is

- (A) fx=-100x-1002+104
- (B) fx=-0.01x-1002+104
- (C) fx=-0.01x+1002+104

and the company attains a maximum profit of

- (A) $4,000,000
- (B) $100,000,000
- (C) $104,000,000