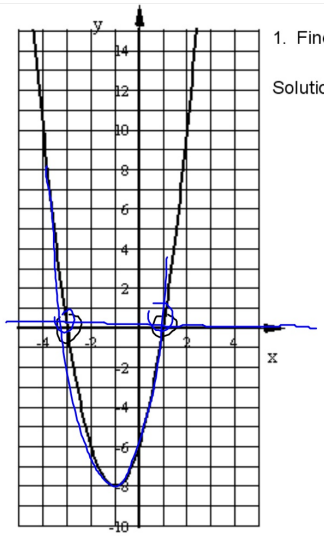
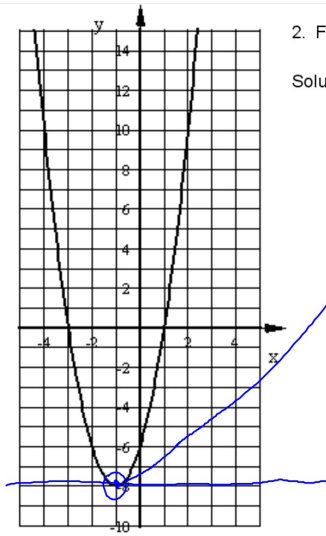


1. Find the solution(s), if possible, to this equation: $0 = ax^2 + bx + c$

Solution(s) is(are): $-3, 1$

Because when $y=0$ you're finding x-int.

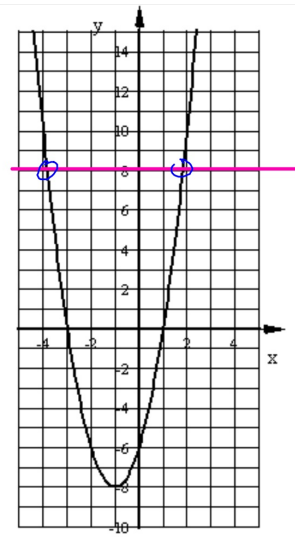


2. Find the solution(s), if possible, to this equation: $-8 = ax^2 + bx + c$

Solution(s) is(are): -1

$(-1, -8)$

$y=-8$

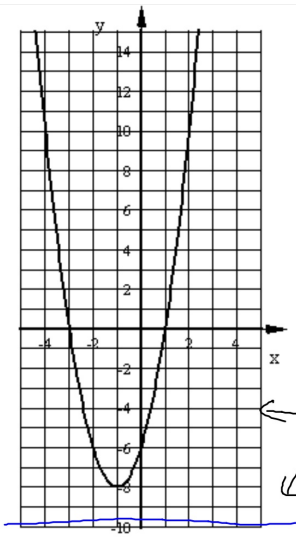


3. Find the solution(s), if possible, to this equation: $10 = ax^2 + bx + c$

Solution(s) is(are): $-4, 2$

$y=10$

$y=10$

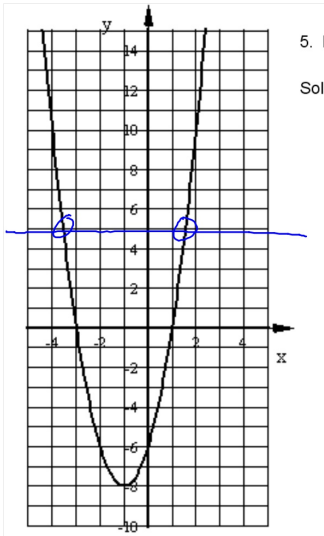


4. Find the solution(s), if possible, to this equation: $-10 = ax^2 + bx + c$

Solution(s) is(are): _____

No Real Sol

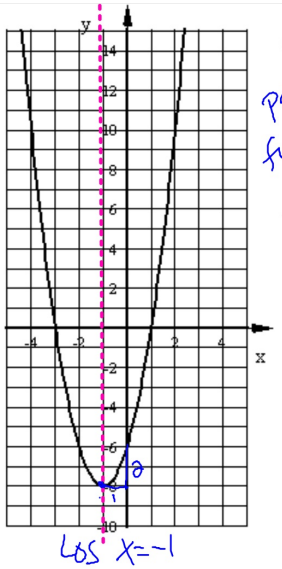
graph & horiz line don't intersect



5. Find the solution(s), if possible, to this equation: $5 = ax^2 + bx + c$

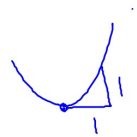
Solution(s) is(are):_____

2 real sol but they can't be determined from the graph



6. Find the value of a. $a = 2$

parent function



this function

7. Find the value of b. $b = 4$

LOS $-1 = \frac{-b}{2a}$

$-1 = \frac{-b}{4} \rightarrow -4 = -b$

$4 = b$

8. Find the value of c. $c = -6$

y-int

LOS $x = -1$

An object is shot upward from the top of a 75 foot tall tower with an initial velocity of 136 ft/sec. The following equation models the height of the object as a function of time:

$h(t) = -16t^2 + 136t + 75$

1. Find the time it takes to reach its maximum height. → VERTEX (4.25 sec, 364 ft)

4.25 sec

$\frac{-136}{2(-16)} = 4.25$

2. Find the time it takes to reach a height of 250 feet.

$250 = -16t^2 + 136t + 75$

$0 = -16t^2 + 136t - 125$

$b^2 - 4ac = 7296$

$x = \frac{-136 \pm \sqrt{7296}}{-32}$

$x = 1.58 \text{ sec}$ & 6.92 sec

3. Find the time it takes to reach the ground → $h = 0$

$0 = -16t^2 + 136t + 75$

$b^2 - 4ac = 23{,}296$

$x = \frac{-136 \pm \sqrt{23{,}296}}{-32} = -0.52$ & 9.02

9.02 sec

4. Find the time it takes to reach a height of 50 feet → $h = 50$

$50 = -16t^2 + 136t + 75$

$0 = -16t^2 + 136t + 25$

$b^2 - 4ac = 20{,}096$

$x = \frac{-136 \pm \sqrt{20{,}096}}{-32}$

$x = -0.18$ & 8.68

8.68 sec

5. Find the time it takes to reach a height of 400 feet → $h = 400$

$400 = -16t^2 + 136t + 75$

$0 = -16t^2 + 136t - 325$

$b^2 - 4ac = -2304$ → No Real sol

OBJECT NEVER REACHES THIS HT. → THIS IS ALSO TRUE BECAUSE MAX HT WAS ONLY 364 ft!