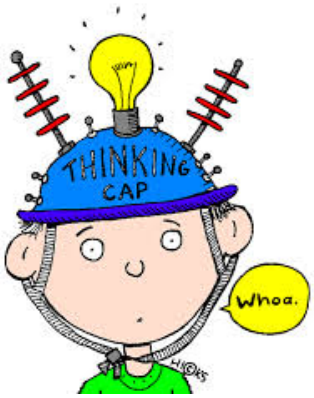
https://www.google.ca/#q=you+tube+quadratic+formula

5.6 Quadratic Formula Problems



Which part of the quadratic formula determines the number of zeros?

In $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$: the # under the $\sqrt{\ }$ ie. the discriminant determines whether there will be 2, 1 or 0 solutions.

1. If $b^2 - 4ac > 0$, then the quadratic equation has 2 real roots.
2. If $b^2 - 4ac = 0$, then the quadratic equation has 1 real root.
3. If $b^2 - 4ac < 0$, then the quadratic equation has no real roots.

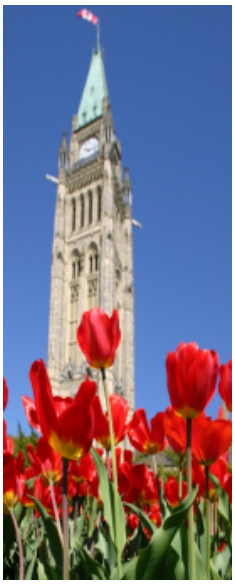
Ex. 1 Determine the discriminant, then state the number of roots (solutions/zeroes).

a) $0 = 3x^2 + 7x + 9$

b) $0 = 5x^2 - 8x - 3$

Ex. 2 A cliff diver in Acapulco, Mexico, dives from about 17m above the water. The diver's height above the water, h, in meters, after t seconds, is modelled by the equation $h = -4.9t^2 + 1.5t + 17$.
How long is the diver in the air?

Ex. 3 The height of an object thrown downward off the Peace tower is given by the equation $h = -5t^2 - 5t + 90$, where h is the height above the ground in metres and t is the time in seconds. How long does it take for the object to hit the ground?



Ex. 4 A ball is thrown up into the air. Its height h, in metres, after t seconds is $h = -4.9t^2 + 38t + 1.75$.

a) What is the height of the ball after 3 s?
b) For what length of time is the ball above 50m?
c) When does the ball strike the ground?