Discriminant Notes

Discriminant: the evaluation of $b^2 - 4ac$ tells how many x-intercepts (real solutions) there are in a quadratic function.

Possibilities

$b^2 - 4ac > 0$	2 solutions to the quadratic function
$b^2 - 4ac = 0$	1 solution to the quadratic function
$b^2 - 4ac < 0$	no solutions to the quadratic function

Find the discriminant and tell if the function has 0, 1, or 2 real solutions.

1. $x^2 - 5x - 10 = 0$

Find the discriminant and tell if the function has 0, 1, or 2 real solutions.

1. $x^2 - 5x - 10 = 0$

$b^2 - 4ac$

$-5^2 - 4(1)(-10)$

$25 + 40$

65

Discriminant is > 0, therefore there are 2 solutions.

Find the discriminant and tell if the function has 0, 1, or 2 real solutions.

2. $3x^2 - 2x + 5 = 0$

Find the discriminant and tell if the function has 0, 1, or 2 real solutions.

2. $3x^2 - 2x + 5 = 0$

$b^2 - 4ac$

$-2^2 - 4(3)(5)$

$4 - 60$

-56

Discriminant is < 0, therefore there are no solutions.

Find the discriminant and tell if the function has 0, 1, or 2 real solutions.

3. $-3x^2 + 6x - 3 = 0$

Find the discriminant and tell if the function has 0, 1, or 2 real solutions.

3. $-3x^2 + 6x - 3 = 0$

$b^2 - 4ac$

$6^2 - 4(-3)(-3)$

$36 - 36$

0

Discriminant is = 0, therefore there is 1 solution.