1.2: Discriminant

- only applies to quadratic equations (highest variable is x^2)
- Famula: b^2-4ac
- tells you what type of solutions you will get

b^2-4ac is...	# of solutions	type of solutions
positive	2	real
negative	2	imaginary
zero	1	real

Determine the discriminant & type of solution:

Ex1) $5x^2-8x+10=0$

a:5 b:-8 c:10

b^2-4ac

$(-8)^2-4(5)(10)=-136$ ← discriminant

2 imaginary solutions ← type

Ex 2) $m^2 + 5m = -3$
$+3 \quad +3$

$1m^2 + 5m + 3 = 0$
$a:1 \quad b:5 \quad c:3$

$b^2 - 4ac$
$5^2 - 4(1)(3) = \boxed{13}$

2 real solutions

Ex 3) $4y^2 + 2y + 16 = 18y$
$-18y \quad -18y$
$4y^2 - 16y + 16 = 0$
$a:4 \quad b:-16 \quad c:16$
$b^2 - 4ac$
$(-16)^2 - 4(4)(16) = 0$

1 real solution

You try: $3x^2 - 2x + 4 = 0$

You try: $x^2 + 3x + 2 = 3$