QUADRATIC FORMULA

Form: $ax^2+bx+c=0$

$$x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$$

ex: $\frac{5\pm\sqrt{2}}{10}$

ex: $\frac{2\pm4\sqrt{3}}{8}$

$\frac{1\pm2\sqrt{3}}{4}$

ex: $\frac{3\pm i\sqrt{2}}{5}$

$\frac{3}{5}\pm\frac{\sqrt{2}}{5}i$

ex: $\frac{3\pm2}{5}$

$\frac{3+2}{5}=\frac{5}{5}=1$

$\frac{3-2}{5}=\frac{1}{5}$

11. $x^2-7x+3=0$

$a=1 \quad b=-7 \quad c=3$

$$x=\frac{-(-7)\pm\sqrt{(-7)^2-4(1)(3)}}{2(1)}$$

$$=\frac{7\pm\sqrt{49-12}}{2}$$

$$=\frac{7\pm\sqrt{37}}{2}$$

DISCRIMINANT

GIVEN: $ax^2+bx+c=0$

DISCRIMINANT $=b^2-4ac$

- IT IS POSITIVE
  - 2 REAL ANSWERS, DISTINCT
- IT IS NEGATIVE
  - 2 IMAG ANSWERS
- IT IS EQUAL TO ZERO
  - 1 REAL ANSWER, REPEATED

12. $3x^2+5x-8=0$

$a=3 \quad b=5 \quad c=-8$

$b^2-4ac=(5)^2-4(3)(-8)$

$=25+96$

$=121$

2 REAL ANS, DISTINCT