

Fri 11-9-18

Practice Problems for Quiz

Solve +
 Give the
 discriminant

(A) $x^2 - 8x + 6 = 0$ $a=1$
 $b=-8$
 $c=6$

$$x = \frac{8 \pm \sqrt{(-8)^2 - 4(1)(6)}}{2(1)}$$

$$x = \frac{8 \pm \sqrt{64 - 24}}{2}$$

$$x = \frac{8 \pm \sqrt{40}}{2}$$

$$x = \frac{4 \pm 2\sqrt{10}}{2} \quad \text{Discriminant: } \boxed{40}$$

$$x = 2 \pm \sqrt{10}$$

$$\boxed{x = 2 + \sqrt{10}}$$

or

$$\boxed{x = 2 - \sqrt{10}}$$

(C) $2x^2 - 5x + 3 = 0$ $a=2$ $b=-5$ $c=3$

$$\frac{5 \pm \sqrt{(-5)^2 - 4(2)(3)}}{2(2)}$$

$$x = \frac{5 \pm \sqrt{25 - 24}}{4}$$

$$x = \frac{5 \pm \sqrt{1}}{4} \quad \text{Discriminant } \boxed{1}$$

$$x = \frac{5 \pm 1}{4}$$

$$x = \frac{5+1}{4} \text{ or } x = \frac{5-1}{4}$$

$$\boxed{x = \frac{6}{4} = \frac{3}{2}} \text{ or } \boxed{x = \frac{4}{4} = 1}$$

(B) $3x^2 + 6x + 3 = 0$

$$x = \frac{-6 \pm \sqrt{(6)^2 - 4(3)(3)}}{2(3)}$$

$$x = \frac{-6 \pm \sqrt{36 - 36}}{6}$$

$$x = \frac{-6 \pm \sqrt{0}}{6}$$

$$x = \frac{-6 \pm 0}{6}$$

Discriminant

$$\boxed{0}$$

$$x = \frac{-6}{6}$$

$$\boxed{x = -1}$$

(D) $5x^2 + 7x + 2 = 0$ $a=5$

$b=7$

$c=2$

$$x = \frac{-7 \pm \sqrt{(7)^2 - 4(5)(2)}}{2(5)}$$

$$x = \frac{-7 \pm \sqrt{49 - 40}}{10}$$

Discriminant

$$x = \frac{-7 \pm \sqrt{9}}{10}$$

$$\boxed{9}$$

$$x = \frac{-7 \pm 3}{10}$$

$$x = \frac{-7+3}{10} \text{ or } x = \frac{-7-3}{10}$$

$$\boxed{x = \frac{-4}{10} = -\frac{2}{5}} \text{ or } \boxed{x = \frac{-10}{10} = -1}$$