

Alg 2 Tues. CLASS NOTES 9-25-12

3. $g(x) = 3x^2 - 4x + 1$ QF.

$$a = 3$$

$$b^2 - 4ac$$

$$b = -4$$

$$(-4)^2 - 4(3)(-1)$$

$$c = -1$$

$$16 + 12 = 28 = d$$

$$x = \frac{-b \pm \sqrt{d}}{2a} = \frac{+4 \pm \sqrt{28}}{6}$$

OK

$$3\left(\frac{2+\sqrt{7}}{3}\right)^2 - 4\left(\frac{2+\sqrt{7}}{3}\right)$$

$$x = \frac{4 \pm 2\sqrt{7}}{6}$$

$$x = \frac{2 \pm \sqrt{7}}{3}$$

$$3\left[\frac{4+4\sqrt{7}+7}{9}\right] - \frac{8+4\sqrt{7}}{3}$$

$$\frac{11+4\sqrt{7}}{3} - \frac{8+4\sqrt{7}}{3}$$

$$\frac{3}{3} - 1 = 0 \quad \checkmark$$

⑤ $g(x) = -x^2 - 5x + 6$ QF

$$a = -1$$

$$b^2 - 4ac$$

$$b = -5$$

$$(-5)^2 - 4(-1)(6)$$

$$c = 6$$

$$25 + 24 = \boxed{49 = d}$$

$$x = \frac{-b \pm \sqrt{d}}{2a} \quad x = \frac{5 \pm 7}{-2} = \left\{ \frac{12}{-2}, \frac{-2}{-2} \right\} = \boxed{\{-6, 1\}}$$

$$\begin{aligned} \text{Check } -(-6)^2 - 5(-6) + 6 &\stackrel{?}{=} 0 \\ -36 + 30 + 6 &\stackrel{?}{=} 0 \checkmark \end{aligned}$$

$$-(1)^2 - 5(1) + 6 \stackrel{?}{=} 0$$

$$-1 - 5 + 6 \stackrel{?}{=} 0 \checkmark$$

$$\textcircled{7.} \quad f(x) = 2x^2 - 19 \quad \text{QF}$$

$$0 = 2x^2 + 0x - 19$$

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

$$a = 2$$

$$b = 0$$

$$c = -19$$

$$b^2 - 4ac$$

$$(0)^2 - 4(2)(-19)$$

$$+152 = d$$

$$x = \frac{0 \pm 2\sqrt{38}}{4}$$

$$x = \frac{\pm \sqrt{38}}{2}$$

$$\begin{array}{r} 152 \\ \diagdown \quad \diagup \\ \textcircled{2} \quad 76 \\ \diagdown \quad \diagup \\ \textcircled{2} \quad 38 \\ \diagdown \quad \diagup \\ \textcircled{2} \quad 19 \\ 4 \cdot 38 \end{array}$$

$$\stackrel{?}{=} 2\left(\frac{\sqrt{38}}{2}\right)^2 - 19 = 0$$

$$2\left[\frac{\frac{38}{4}}{2}\right] - 19 = 0 \quad \checkmark$$

- (15) Find the number of solutions and type of solutions.

$$x^2 + 2x = 10$$

$$x^2 + 2x - 10 = 0$$

$$a = 1 \quad b^2 - 4ac$$

$$b = 2 \quad (2)^2 - 4(1)(-10)$$

$$c = -10 \quad 4 + 40 = 44 = \text{disc}$$

2 real solution

→ IRRATIONAL

$$x = \frac{-2 \pm \sqrt{44}}{2} = \frac{-2 \pm 2\sqrt{11}}{2}$$

$$x = -1 \pm \sqrt{11}$$