

**Quadratic Equation****Solve the following problems.****Example:**

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

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-3 \pm \sqrt{3^2 - 4(2)(-5)}}{2(2)} = \frac{-3 \pm \sqrt{9 - (-40)}}{4} = \frac{-3 \pm \sqrt{49}}{4} = \frac{-3 \pm 7}{4} = 1 \text{ or } \frac{-5}{2}$$

1.  $5x^2 + 11x - 7 = 0$

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

2.  $4x^2 + 8x = 15$

4.  $2x + 3x^2 = 9$

**Solve the following problems based on the 2<sup>nd</sup> kinematic equation.**

1. A car traveling at 20 m/s undergoes an acceleration of  $3\text{m/s}^2$  over a distance of 80 meters. How long did it take to travel this distance?
2. A locomotive traveling 100 m while accelerating at  $-2\text{m/s}^2$  from 15 m/s. How long did it take to travel this distance?
3. A person accelerates at  $0.25\text{m/s}^2$  over a distance of 8 meters. If the persons original velocity was 0.75 m/s, how long did it take to travel the 8 meters?