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

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

1.) $x^2 - 5x - 14 = 0$

$a \quad b \quad c$

$a = 1$

$b = -5$

$c = -14$

$25 + 56 = 81$

$$x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4(1)(-14)}}{2(1)}$$

$$x = \frac{5 \pm \sqrt{81}}{2}$$

$$x = \frac{5 \pm 9}{2}$$

$49 - 5(7) - 14 = 0$

$49 - 35 - 14 = 0$

$14 - 14 = 0$

$0 = 0$ ✓

$$x = \frac{5 + 9}{2}$$

$$x = \frac{14}{2}$$

$x = 7$

$$x = \frac{5 - 9}{2}$$

$$x = \frac{-4}{2}$$

$x = -2$

2.) $4x^2 + 8x + 7 = 4$

$-4 \quad -4$

$4x^2 + 8x + 3 = 0$

$a = 4$

$b = 8$

$c = 3$

$64 - 48 = 16$

$x = \dfrac{-8 \pm \sqrt{(8)^2 - 4(4)(3)}}{2(4)}$

$x = \dfrac{-8 \pm \sqrt{16}}{8}$

$x = \dfrac{-8 \pm 4}{8}$

$x = \dfrac{-8 + 4}{8}$

$x = \dfrac{-4}{8}$

$x = -\dfrac{1}{2}$

$x = \dfrac{-8 - 4}{8}$

$x = \dfrac{-12}{8}$

$x = -1\dfrac{1}{2}$

3.) $2x^2 - 36 = x$