

$$-2x^2 + 14x + 21 = 0$$

$$x^2 - 7x - 3 = 0$$

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

$$x \cdot (x+1) - 3(x+1) = 0$$

$$(x+1) \cdot (x-3) = 0$$

$$x+1 = 0$$

$$x-3 = 0$$

$$x = -1 = -1 + 3$$

$$x = 3$$

$$\bullet 2x^2 - 14x + 24 = 0$$

$$x^2 - 7x + 12 = 0$$

$$x^2 - 3x - 4x + 12 = 0$$

$$x \cdot (x-3) - 4(x-3) = 0 = 3, 4$$

$$(x-3) \cdot (x-4) = 0$$

$$x-3 = 0$$

$$x-4 = 0$$

$$\bullet 7x^2 + 63 = 0$$

$$x^2 - 9 = 0$$

$$x^2 = 9 = -3, 3$$

$$x = \pm 3$$

$$\bullet x^2 - 7x - 4 = 0$$

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

$$x = \frac{7 \pm \sqrt{49 + 16}}{2}$$

$$\frac{7 \pm \sqrt{65}}{2}$$

$$x = \frac{7 \pm \sqrt{65}}{2}$$

$$\frac{7 - \sqrt{65}}{2}$$

$$\bullet x^2 - 2x - 2x = 0$$

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

$$x = \frac{2 \pm \sqrt{4 + 8}}{2}$$

$$x = \frac{2 \pm \sqrt{12}}{2}$$

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

$$x = 1 \pm \sqrt{3}$$

$$\bullet 4x^2 - 24 = 0$$

$$x^2 - 6 = 0$$

$$x^2 = 6$$

$$x = \pm \sqrt{6}$$

$$= \pm \sqrt{6}$$

$$\bullet 2x^2 - 6x - 2 = 4x - 3$$

$$2x^2 - 6x - 2 - 4x + 3 = 0$$

$$2x^2 - 10x + 1 = 0$$

$$x = \frac{-(10) \pm \sqrt{(10)^2 - 4 \cdot 2 \cdot 1}}{2 \cdot 2}$$

$$x = \frac{10 \pm \sqrt{100 - 8}}{4}$$

$$x = \frac{10 \pm \sqrt{92}}{4}$$

$$x = \frac{10 \pm 2\sqrt{23}}{4}$$

$$x = \frac{5 \pm \sqrt{23}}{2}$$

$$\bullet -14x^2 + 4x + 14 = -6x^2$$

$$-14x^2 + 4x + 14 + 6x^2 = 0$$

$$-8x^2 + 4x + 14 = 0$$

$$4x^2 - 2x - 7 = 0$$

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

$$x = \frac{2 \pm \sqrt{4 + 112}}{8}$$

$$= \frac{2 \pm \sqrt{116}}{8}$$

$$= \frac{1 \pm 2\sqrt{29}}{4}$$

$$= \frac{1 \pm \sqrt{29}}{4}$$