Ecuaciones de segundo grado:

Formula para allar respuesta:

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

Laberinto Cuadratico

$$\underset{a}{-7}x^2 + \underset{b}{14}x + \underset{c}{21} = 0$$

Solución:

- $x = \frac{-14 \pm \sqrt{14^2 - 4(-7)(21)}}{2(-7)}$
- $x = \frac{-14 \pm \sqrt{196 + 588}}{-14}$
- $x = \frac{-14 \pm \sqrt{784}}{-14}$
- $x = \frac{-14 \pm 28}{-14}$

$\frac{-14+28}{-14} = \frac{14}{-14} = -1 \rightarrow x = -1$

$\frac{-14-28}{-14} = \frac{-42}{-14} = 3 \rightarrow x = 3$

* $2x^2 - 14x + 24 = 0$
(a, b, c)

Solución:

- $x = \frac{-(-14) \pm \sqrt{-14^2 - 4(2)(24)}}{2(2)}$
- $x = \frac{14 \pm \sqrt{196 + -192}}{4}$
- $x = \frac{14 \pm \sqrt{4}}{4}$
- $x = \frac{14 \pm 2}{4}$ → $\frac{14+2}{4} = 4$; $\frac{14-2}{4} = 3$

* $-7x^2 + 63 = 0$

Solución

- $-7x^2 = -63$
- $x^2 = \frac{-63}{-7} = 9$
- $\sqrt{x^2} = \sqrt{9}$
- $x = \pm 3$ < 3, -3

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

Solución

- $x = \frac{-(-7) \pm \sqrt{(-7)^2 - 4(1)(-4)}}{2(1)}$
- $x = \frac{7 \pm \sqrt{49 + 16}}{2}$
- $x = \frac{7 \pm \sqrt{65}}{2}$

* $x^2 - 2x\,2 = 0$

Solución

- $x = \frac{-(-2) \pm \sqrt{(-2)^2 - 4(1)(2)}}{2(1)}$
- $x = \frac{2 \pm \sqrt{4 + 8}}{2}$
- $x = \frac{2 \pm \sqrt{12}}{2}$
- $x = \frac{2 \pm \sqrt{2^2} \times \sqrt{3}}{2}$
- $x = \frac{2 \pm 2\sqrt{3}}{2}$
- $x = 1 \pm \sqrt{3}$

* $4x^2 - 24 = 0$

Solución

- $x^2 - 6 = 0$
- $x^2 = 6$
- $x = \pm\sqrt{6}$ < $x = -\sqrt{6}$, $x = \sqrt{6}$

* $2x^2 - 6x - 2 = 4x - 3$

Solución

- $x = \frac{-(-10) \pm \sqrt{(10)^2 - 4 \times 2 \times 1}}{2\ 2}$
- $x = \frac{10 \pm \sqrt{100 - 8}}{4}$
- $x = \frac{10 \pm \sqrt{92}}{4}$
- $x = \frac{10 \pm 2\sqrt{23}}{4}$ < $\frac{10 - 2\sqrt{23}}{4}$, $\frac{10 + 2\sqrt{23}}{4}$

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

Solución

- $-14x^2 + 4x + 14 - 6x^2 = 0$
- $-20x^2 + 4x + 14 = 0$
- $10x^2 - 2x - 7 = 0$
- $x = \frac{-(-2) \pm \sqrt{(-2)^2 - 4 \times 10 \times (-7)}}{2\ 10}$
- $x = \frac{2 \pm \sqrt{(-2)^2 - 4 \times 10 \times 7}}{2\ 10}$
- $x = \frac{2 \pm \sqrt{4 + 280}}{20}$
- $x = \frac{2 \pm 284}{20}$
- $x = \frac{2 \pm 2\sqrt{71}}{20}$ < $\frac{2 + 2\sqrt{71}}{20}$, $\frac{2 - 2\sqrt{71}}{20}$