

Quadratische Gleichungen Aufgabe 13

$$(1 + x)(2 + x)(3 + x) + (1 - x)(2 - x)(3 - x) = 120$$

$$(2 + x + 2x + x^2)(3 + x) + (2 - x - 2x + x^2)(3 - x) = 120$$

$$(x^2 + 3x + 2)(3 + x) + (x^2 - 3x + 2)(3 - x) = 120$$

$$3x^2 + x^3 + 9x + 3x^2 + 6 + 2x + 3x^2 - x^3 - 9x + 3x^2 + 6 - 2x = 120$$

$$12x^2 + 12 = 120 \quad | -12$$

$$12x^2 = 108 \quad | :12$$

$$x^2 = 9 \quad | \sqrt{\quad}$$

$$\mathbf{x_{1,2} = \pm \sqrt{9} = \pm 3}$$

$$x_1 = 3$$

$$x_2 = -3$$