**Kubische Gleichungen I**

**Löse die Gleichungen und färbe unten die Felder mit den errechneten ganzzahligen Ergebnissen.**

**1)** 9(- 2x³ - 9x) = 6(- 4x³ + 5x) + 75x |T

 -18x³ - 81x = -24x³ + 30x + 75x |+24x³-105x

 6x³ - 24x = 0 |:6

 x³ - 4x = 0 |ausklammern

 x(x² - 4) = 0 |3. Binom

 **x(x + 2)(x – 2) = 0**

**x1 = 0 x2 = -2 x3 = 2 L = {-2; 0; 2}**

**2)** 6x³ = 26x + 7(x³ - 5x) |T

 6x³ = 26x + 7x³ - 35x |-7x³

 -x³ + 9x = 0 |:(-1)

 x³ - 9x = 0 |ausklammern

 x(x² - 9) = 0 |3. Binom

**x(x + 3)(x – 3) = 0**

**x1 = 0 x2 = -3 x3 = 3 L = {-3; 0; 3}**

**3)** 4(3x³ - 7x) = -4x + 11x³ + 76x |T

 x³ - 28x = 72x + 6x³ |-11x³-72x

 x³ - 100x = 0 |ausklammern

 x(x² - 10) = 0 |3. Binom

**x(x + 10)(x – 10) = 0**

**x1 = 0 x2 = -10 x3 = 10 L = {-10; 0; 10}**

**4)** 3x(x - 1)(x - 4) = x(2x² - 3) – 41,25x |T

 (3x² - 3x)(x - 4) = 2x³ - 3x – 41,25x |T

 3x³ - 3x² – 12x² + 12x = 2x³ - 44,25x |-2x³+44,25x

 x³ - 15x² + 56,25x = 0 |ausklammern

 x(x² - 15x + 56,25) = 0

 **x(x - 7,5)² = 0** |2. Binom

**x1 = 0 x2 = 7,5 L = {0; 7,5}**

**5)** 6x(x - 8)(x - 8) = 1120x + x(5x² - 7) |T

 (6x² - 48x)(x - 8) = 1120x + 5x³ - 7x |T

 6x³ - 48x² + 48x² + 384x = 1120x + 5x³ - 7x |-1120x-5x³+7x

 x³ + 391x = 1120x |-1120x

 x³ - 729x = 0 |ausklammern

 x(x² - 729) = 0 |3. Binom

**x(x + 27)(x – 27) = 0**

**x1 = 0 x2 = -27 x3 = 27 L = {-27; 0; 27}**