

S. 26/3 – Faktorisiere !!!

a)

$$3y^2 - 12y + 12 = 3 \cdot (y^2 - 4y + 4) = 3 \cdot (y - 2)^2$$

$$ab^2 - 4ac^2 = a \cdot (b^2 - 4c^2) = a \cdot (b - 2c) \cdot (b + 2c)$$



b)

$$-2x^2 + 24x - 72 = -2 \cdot (x^2 - 12x + 36) = -2 \cdot (x - 6)^2$$

$$x^2 - 16x = x \cdot (x - 16)$$

c)

$$-3u^2 + 30u - 75 = -3 \cdot (u^2 - 10u + 25) = -3 \cdot (u - 5)^2$$

$$\frac{1}{9}v^2 - \frac{1}{4}w^2 = \left(-\frac{1}{3}v - \frac{1}{2}w\right) \cdot \left(\frac{1}{3}v + \frac{1}{2}w\right)$$

d)

$$(a - b)^2 - (a + b)^2 =$$

$$a^2 - 2ab + b^2 - (a^2 + 2ab + b^2) =$$

$$a^2 - 2ab + b^2 - a^2 - 2ab - b^2 = -4ab$$

$$x^3 - x = x \cdot (x^2 - 1) = x \cdot (x - 1) \cdot (x + 1)$$



e)

$$(2x + y)^2 - (2x - y)^2 =$$

$$4x^2 + 4xy + y^2 - (4x^2 - 4xy + y^2) =$$

$$4x^2 + 4xy + y^2 - 4x^2 + 4xy - y^2 = 8xy$$

$$(5 - 4x)^2 - (4x - 5)^2 =$$

$$25 - 40x + 16x^2 - (16x^2 - 40x + 25) =$$

$$25 - 40x + 16x^2 - 16x^2 + 40x - 25 = 0$$

$$4 \cdot (a^2 - 2b^2) - b^2 =$$

$$4a^2 - 8b^2 - b^2 =$$

$$4a^2 - 9b^2 = (2a - 3b) \cdot (2a + 3b)$$

