

Bruchgleichungen

Aufgabe 1:

Löse

$$\text{a) } \frac{4x-3}{-4} = \frac{-3x-4}{-2}$$

$$\text{b) } \frac{4x+3}{2} = \frac{4x}{-3}$$

$$\text{c) } \frac{-5x+4}{5} = \frac{3x+4}{-4}$$

$$\text{d) } \frac{3}{-2x+4} = \frac{4}{-4x+4}$$

Lösung:

$$\text{a) } \frac{4x-3}{-4} = \frac{-3x-4}{-2} \quad | \cdot (-4)$$

$$4x-3 = \frac{12x+16}{-2} \quad | \cdot (-2)$$

$$-8x+6 = 12x+16 \quad | +8x$$

$$6 = 20x+16 \quad | -16$$

$$-10 = 20x \quad | :20$$

$$-0,5 = x$$

$$\text{b) } \frac{4x+3}{2} = \frac{4x}{-3} \quad | \cdot 2$$

$$4x+3 = \frac{8x}{-3} \quad | \cdot (-3)$$

$$-12x-9 = 8x \quad | +12x$$

$$-9 = 20x \quad | :20$$

$$-0,45 = x$$

$$\text{c) } \frac{-5x+4}{5} = \frac{3x+4}{-4} \quad | \cdot 5$$

$$-5x+4 = \frac{15x+20}{-4} \quad | \cdot (-4)$$

$$20x-16 = 15x+20 \quad | -20x$$

$$-16 = -5x+20 \quad | -20$$

$$-36 = -5x \quad | :(-5)$$

$$7,2 = x$$

$$\text{d) } \frac{3}{-2x+4} = \frac{4}{-4x+4} \quad | \cdot (-2x+4)$$

$$3 = \frac{-8x+16}{-4x+4} \quad | \cdot (-4x+4)$$

$$-12x+12 = -8x+16 \quad | +12x$$

$$12 = 4x+16 \quad | -16$$

$$-4 = 4x \quad | :4$$

$$-1 = x$$