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Opgave 25

OPGAVE 25

Du skal bestemme grundmængde og x i følgende ligninger:

$$\text{a) } \frac{1}{3} = \frac{10x-12}{24} \quad \text{b) } \frac{1-2x}{6+x} = \frac{28-6x}{3x-7} \quad \text{c) } \frac{12}{x} - \frac{6}{x-2} = \frac{9}{x}$$

$$\text{a) } \frac{1}{3} = \frac{10x-12}{24}$$

$$1 \cdot 24 = 3 \cdot (10x - 12)$$

$$24 = 30x - 36$$

$$24 + 36 = 30x$$

$$60 = 30x \quad | :30$$

$$2 = x$$

$$x = 2$$

$$\text{b) } \frac{1-2x}{6+x} = \frac{28-6x}{3x-7}$$

$$(1-2x) \cdot (3x-7) = (6+x) \cdot (28-6x)$$

$$3x - 7 - 6x^2 + 14x = 168 - 36x + 28x - 6x^2$$

$$-6x^2 + 6x^2 + 3x + 14x + 36x - 28x = 168 + 7$$

$$25x = 175 \quad | :25$$

$$x = 7$$

$$\text{c) } \frac{12}{x} - \frac{6}{x-2} = \frac{9}{x} \quad | \cdot x \cdot (x-2)$$

$$12 \cdot (x-2) - 6x = 9 \cdot (x-2)$$

$$12x - 24 - 6x = 9x - 18$$

$$12x - 6x - 9x = -18 + 24$$

$$-3x = 6 \quad | : -3$$

$$x = -2$$

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