

# Ligninger repetition

Ligninger type 1:

1)  $24 = 12x$

$$\begin{array}{l} \frac{24}{12} = \frac{12x}{12} \quad \text{Dividerer med 12 på begge sider} \\ \Downarrow \\ 2 = x \\ \Downarrow \\ \underline{\underline{x = 2}} \end{array}$$

6)  $42 = 6x$

$$\begin{array}{l} \frac{42}{6} = \frac{6x}{6} \quad \text{Dividerer med 6 på begge sider} \\ \Downarrow \\ 7 = x \\ \Downarrow \\ \underline{\underline{x = 7}} \end{array}$$

2)  $45 = 9x$

$$\begin{array}{l} \frac{45}{9} = \frac{9x}{9} \quad \text{Dividerer med 9 på begge sider} \\ \Downarrow \\ 5 = x \\ \Downarrow \\ \underline{\underline{x = 5}} \end{array}$$

7)  $90 = 9x$

$$\begin{array}{l} \frac{90}{9} = \frac{9x}{9} \quad \text{Dividerer med 9 på begge sider} \\ \Downarrow \\ 10 = x \\ \Downarrow \\ \underline{\underline{x = 10}} \end{array}$$

3)  $10 = 5x$

$$\begin{array}{l} \frac{10}{5} = \frac{5x}{5} \quad \text{Dividerer med 5 på begge sider} \\ \Downarrow \\ 2 = x \\ \Downarrow \\ \underline{\underline{x = 2}} \end{array}$$

8)  $56 = 8x$

$$\begin{array}{l} \frac{56}{8} = \frac{8x}{8} \quad \text{Dividerer med 8 på begge sider} \\ \Downarrow \\ 7 = x \\ \Downarrow \\ \underline{\underline{x = 7}} \end{array}$$

4)  $20 = 4x$

$$\begin{array}{l} \frac{20}{4} = \frac{4x}{4} \quad \text{Dividerer med 4 på begge sider} \\ \Downarrow \\ 5 = x \\ \Downarrow \\ \underline{\underline{x = 5}} \end{array}$$

9)  $64 = 16x$

$$\begin{array}{l} \frac{64}{16} = \frac{16x}{16} \quad \text{Dividerer med 16 på begge sider} \\ \Downarrow \\ 4 = x \\ \Downarrow \\ \underline{\underline{x = 4}} \end{array}$$

5)  $35 = 7x$

$$\begin{array}{l} \frac{35}{7} = \frac{7x}{7} \quad \text{Dividerer med 7 på begge sider} \\ \Downarrow \\ 5 = x \\ \Downarrow \\ \underline{\underline{x = 5}} \end{array}$$

10)  $28 = 7x$

$$\begin{array}{l} \frac{28}{7} = \frac{7x}{7} \quad \text{Dividerer med 7 på begge sider} \\ \Downarrow \\ 4 = x \\ \Downarrow \\ \underline{\underline{x = 4}} \end{array}$$

# Ligninger repetition

Ligninger type 2:

11)  $x + 8 = 16$

$$\begin{aligned} x + 8 - 8 &= 16 - 8 && \text{Trækker 8 fra på begge sider} \\ \Downarrow \\ \underline{\underline{x = 8}} \end{aligned}$$

16)  $x + 6 = 13$

$$\begin{aligned} x + 6 - 6 &= 13 - 6 && \text{Trækker 6 fra på begge sider} \\ \Downarrow \\ \underline{\underline{x = 7}} \end{aligned}$$

12)  $x - 7 = 13$

$$\begin{aligned} x - 7 + 7 &= 13 + 7 && \text{Lægger 7 til på begge sider} \\ \Downarrow \\ \underline{\underline{x = 20}} \end{aligned}$$

17)  $x - 6 = 18$

$$\begin{aligned} x - 6 + 6 &= 18 + 6 && \text{Lægger 6 til på begge sider} \\ \Downarrow \\ \underline{\underline{x = 24}} \end{aligned}$$

13)  $x + 2 = 12$

$$\begin{aligned} x + 2 - 2 &= 12 - 2 && \text{Trækker 2 fra på begge sider} \\ \Downarrow \\ \underline{\underline{x = 10}} \end{aligned}$$

18)  $x + 4 = 33$

$$\begin{aligned} x + 4 - 4 &= 33 - 4 \\ \Downarrow \\ \underline{\underline{x = 29}} \end{aligned}$$

14)  $x + 10 = 32$

$$\begin{aligned} x + 10 - 10 &= 32 - 10 && \text{Trækker 10 fra på begge sider} \\ \Downarrow \\ \underline{\underline{x = 22}} \end{aligned}$$

19)  $x + 3 = 21$

$$\begin{aligned} x + 3 - 3 &= 21 - 3 \\ \Downarrow \\ \underline{\underline{x = 18}} \end{aligned}$$

15)  $x - 5 = 17$

$$\begin{aligned} x - 5 + 5 &= 17 + 5 && \text{Lægger 5 til på begge sider} \\ \Downarrow \\ \underline{\underline{x = 22}} \end{aligned}$$

20)  $x - 9 = 46$

$$\begin{aligned} x - 9 + 9 &= 46 + 9 \\ \Downarrow \\ \underline{\underline{x = 55}} \end{aligned}$$

# Ligninger repetition

Ligninger type 3:

21)  $3x + 4 = 37$

$$\begin{aligned} 3x + 4 - 4 &= 37 - 4 \\ \Downarrow \\ \frac{3x}{3} &= \frac{33}{3} \\ \Downarrow \\ \underline{\underline{x = 11}} \end{aligned}$$

26)  $8x - 18 = 38$

$$\begin{aligned} 8x - 18 + 18 &= 38 + 18 \\ \Downarrow \\ \frac{8x}{8} &= \frac{56}{8} \\ \Downarrow \\ \underline{\underline{x = 7}} \end{aligned}$$

22)  $4x - 12 = 12$

$$\begin{aligned} 4x - 12 + 12 &= 12 + 12 \\ \Downarrow \\ \frac{4x}{4} &= \frac{24}{4} \\ \Downarrow \\ \underline{\underline{x = 6}} \end{aligned}$$

27)  $9x - 13 = 23$

$$\begin{aligned} 9x - 13 + 13 &= 23 + 13 \\ \Downarrow \\ \frac{9x}{9} &= \frac{36}{9} \\ \Downarrow \\ \underline{\underline{x = 4}} \end{aligned}$$

23)  $3x + 12 = 36$

$$\begin{aligned} 3x + 12 - 12 &= 36 - 12 \\ \Downarrow \\ \frac{3x}{3} &= \frac{24}{3} \\ \Downarrow \\ \underline{\underline{x = 8}} \end{aligned}$$

28)  $7x + 5 = 40$

$$\begin{aligned} 7x + 5 - 5 &= 40 - 5 \\ \Downarrow \\ \frac{7x}{7} &= \frac{35}{7} \\ \Downarrow \\ \underline{\underline{x = 5}} \end{aligned}$$

24)  $5x - 14 = 21$

$$\begin{aligned} 5x - 14 + 14 &= 21 + 14 \\ \Downarrow \\ \frac{5x}{5} &= \frac{35}{5} \\ \Downarrow \\ \underline{\underline{x = 7}} \end{aligned}$$

29)  $8x - 8 = 64$

$$\begin{aligned} 8x - 8 + 8 &= 64 + 8 \\ \Downarrow \\ \frac{8x}{8} &= \frac{72}{8} \\ \Downarrow \\ \underline{\underline{x = 9}} \end{aligned}$$

25)  $7x + 5 = 47$

$$\begin{aligned} 7x + 5 - 5 &= 47 - 5 \\ \Downarrow \\ \frac{7x}{7} &= \frac{42}{7} \\ \Downarrow \\ \underline{\underline{x = 6}} \end{aligned}$$

30)  $7x + 5 = 29$

$$\begin{aligned} 7x + 5 - 5 &= 29 - 5 \\ \Downarrow \\ \frac{7x}{7} &= \frac{24}{7} \\ \Downarrow \\ \underline{\underline{x = 3,43}} \end{aligned}$$

# Ligninger repetition

## Ligninger type 4:

$$31) \quad 3x + 25 = 2x + 37$$

$$\begin{aligned} 3x + 25 - 25 &= 2x + 37 - 25 \\ \Downarrow \\ 3x - 2x &= 2x + 12 - 2x \\ \Downarrow \\ \underline{\underline{x = 12}} \end{aligned}$$

$$36) \quad 8x - 20 = 4x + 4$$

$$\begin{aligned} 8x - 20 + 20 &= 4x + 4 + 20 \\ \Downarrow \\ 8x - 4x &= 4x + 24 - 4x \\ \Downarrow \\ \frac{4x}{4} &= \frac{24}{4} \\ \Downarrow \\ \underline{\underline{x = 6}} \end{aligned}$$

$$32) \quad 4x - 10 = 2x + 14$$

$$\begin{aligned} 4x - 10 + 10 &= 2x + 14 + 10 \\ \Downarrow \\ 4x - 2x &= 2x + 24 - 2x \\ \Downarrow \\ \frac{4x}{4} &= \frac{24}{4} \\ \Downarrow \\ \underline{\underline{x = 6}} \end{aligned}$$

$$37) \quad 9x - 15 = 6x + 9$$

$$\begin{aligned} 9x - 15 + 15 &= 6x + 9 + 15 \\ \Downarrow \\ 9x - 6x &= 6x + 24 - 6x \\ \Downarrow \\ \frac{3x}{3} &= \frac{24}{3} \\ \Downarrow \\ \underline{\underline{x = 8}} \end{aligned}$$

$$33) \quad 5x + 12 = 3x + 36$$

$$\begin{aligned} 5x + 12 - 12 &= 3x + 36 - 12 \\ \Downarrow \\ 5x - 3x &= 3x + 24 - 3x \\ \Downarrow \\ \frac{2x}{2} &= \frac{24}{2} \\ \Downarrow \\ \underline{\underline{x = 12}} \end{aligned}$$

$$38) \quad 7x - 5 = 14x + 37$$

$$\begin{aligned} 7x - 5 + 5 &= 14x + 37 + 5 \\ \Downarrow \\ 7x - 14x &= 14x + 42 - 14x \\ \Downarrow \\ \frac{-7x}{-7} &= \frac{42}{-7} \\ \Downarrow \\ \underline{\underline{x = -6}} \end{aligned}$$

$$34) \quad 6x - 14 = 3x - 5$$

$$\begin{aligned} 6x - 14 + 14 &= 3x - 5 + 14 \\ \Downarrow \\ 6x - 3x &= 3x + 9 - 3x \\ \Downarrow \\ \frac{3x}{3} &= \frac{9}{3} \\ \Downarrow \\ \underline{\underline{x = 3}} \end{aligned}$$

$$39) \quad 8x - 7 = x + 42$$

$$\begin{aligned} 8x - 7 + 7 &= x + 42 + 7 \\ \Downarrow \\ 8x - x &= x + 49 - x \\ \Downarrow \\ \frac{7x}{7} &= \frac{49}{7} \\ \Downarrow \\ \underline{\underline{x = 7}} \end{aligned}$$

$$35) \quad 7x + 5 = 2x - 35$$

$$\begin{aligned} 7x + 5 - 5 &= 2x - 35 - 5 \\ \Downarrow \\ 7x - 2x &= 2x - 40 - 2x \\ \Downarrow \\ \frac{5x}{5} &= \frac{-40}{5} \\ \Downarrow \\ \underline{\underline{x = -8}} \end{aligned}$$

$$40) \quad 12x + 3 = 3x + 59$$

$$\begin{aligned} 12x + 3 - 3 &= 3x + 59 - 3 \\ \Downarrow \\ 12x - 3x &= 3x + 56 - 3x \\ \Downarrow \\ \frac{9x}{9} &= \frac{56}{9} \\ \Downarrow \\ x &= 6,22 \end{aligned}$$