

Facit til Kernestof Mat 1 STX – Træningssider 12

1

- a) 29
- b) 33
- c) 7

2

- a) 30
- b) 24
- c) 101

3

- a) -9,0718
- b) 1
- c) 33

4

- a) 0
- b) 2
- c) 70

5

- a) 1
- b) 1
- c) 1

6

- a) 1
- b) 1
- c) 1

7

- a) 1
- b) 1
- c) 1

8

- a) 3
- b) 0,1
- c) 3

9

- a) 4
- b) 0,1
- c) 10

10

a) $\frac{1}{7}$

b) 1

c) $\frac{1}{2}$

11

a) $7^{\frac{5}{4}}$

b) $2^{\frac{4}{3}}$

c) $14^{\frac{5}{4}}$

12

a) 9

b) 10

c) 4

13

a) 8

b) 10

c) 4

14

a) 7

b) 30

c) 14

15

a) 1

b) 10000

c) 16

16

a) 144

b) 144

c) 8

17

a) $2(x+3)=4$

$$2x + 6 = 4$$

$$2x+6-6 = 4-6$$

$$2x = -2$$

$$\frac{2x}{2} = \frac{-2}{2}$$

$$x = -1$$

b) $1+x=-3x-3$

$$1+x+3x=-3x-3+3x$$

$$1+4x=-3$$

$$1+4x-1=-3-1$$

$$4x = -4$$

$$\frac{4x}{4} = \frac{-4}{4}$$

$$x = -1$$

c) $2-4(x-1)=4$

$$2-4x+4=4$$

$$6-4x=4$$

$$6-4x-6=4-6$$

$$-4x=-2$$

$$\frac{-4x}{-4} = \frac{-2}{-4}$$

$$x = \frac{1}{2}$$

18

a) $5-3(6-x)=8$

$$5-18+3x=8$$

$$-13+3x=8$$

$$-13+3x+13=8+13$$

$$3x=21$$

$$\frac{3x}{3} = \frac{21}{3}$$

$$x = 7$$

b) $5-(2-x)=-x$

$$5-2+x=-x$$

$$3+x=-x$$

$$3+x+x=-x+x$$

$$3+2x=0$$

$$3+2x-3=0-3$$

$$2x=-3$$

$$\frac{2x}{2} = \frac{-3}{2}$$

$$x = -1,5$$

$$\begin{aligned}
 \text{c) } & 1-3(1-2x)=4 \\
 & 1-3+6x=4 \\
 & -2+6x=4 \\
 & -2+6x+2=4+2 \\
 & 6x=6 \\
 & \frac{6x}{6}=\frac{6}{6} \\
 & x=1
 \end{aligned}$$

19

$$\begin{aligned}
 \text{a) } & 4-2(x-1)=3(1-x) \\
 & 4-2x+2=3-3x \\
 & 6-2x=3-3x \\
 & 6-2x+3x=3-3x+3x \\
 & 6+x=3 \\
 & 6+x-6=3-6 \\
 & x=-3
 \end{aligned}$$

$$\begin{aligned}
 \text{b) } & 6+4(3+2x)=2x \\
 & 6+12+8x=2x \\
 & 18+8x=2x \\
 & 18+8x-8x=2x-8x \\
 & 18=-6x \\
 & \frac{18}{-6}=\frac{-6x}{-6} \\
 & -3=x
 \end{aligned}$$

$$\begin{aligned}
 \text{c) } & 8+3(2+x)=2+2(1+x) \\
 & 8+6+3x=2+2+2x \\
 & 14+3x=4+2x \\
 & 14+3x-2x=4+2x-2x \\
 & 14+x=4, \\
 & 14+x-14=4-14 \\
 & x=-10
 \end{aligned}$$

20

$$\begin{aligned}
 \text{a) } & 4x-4=2(2-x) \\
 & 4x-4=4-2x \\
 & 4x-4+2x=4-2x+2x \\
 & 6x-4=4 \\
 & 6x-4+4=4+4 \\
 & 6x=8 \\
 & \frac{6x}{6}=\frac{8}{6} \\
 & x=\frac{4}{3}
 \end{aligned}$$

$$b) 6(x+1)=3-(1-x)$$

$$6x+6=3-1+x$$

$$6x+6=2+x$$

$$6x+6-x=2+x-x$$

$$5x+6=2$$

$$5x+6-6=2-6$$

$$5x=-4$$

$$\frac{5x}{5} = \frac{-4}{5}$$

$$x = \frac{-4}{5}$$

$$c) 2x-2=2(2x-2)$$

$$2x-2=4x-4$$

$$2x-2-2x=4x-4-2x$$

$$-2=2x-4$$

$$-2+4=2x-4+4$$

$$2=2x$$

$$x=1$$

21

$$a) 2(4x+1)=10$$

$$8x+2=10$$

$$8x+2-2=10-2$$

$$8x=8$$

$$x=1$$

$$b) 7=3+2(2+x)$$

$$7=3+4+2x$$

$$7=7+2x$$

$$7-7=7+2x-7$$

$$0=2x$$

$$x=0$$

$$c) 9+x=7-(2x+1)$$

$$9+x=7-2x-1$$

$$9+x=6-2x$$

$$9+x+2x=6-2x+2x$$

$$9+3x=6$$

$$9+3x-9=6-9$$

$$3x=-3$$

$$\frac{3x}{3} = \frac{-3}{3}$$

$$x = -1$$

22

a) $4x+2=-(2x-1)$

$$4x+2=-2x+1$$

$$4x+2+2x=-2x+1+2x$$

$$6x+2=1$$

$$6x+2-2=1-2$$

$$6x=-1$$

$$\frac{6x}{6}=\frac{-1}{6}$$

$$x=\frac{-1}{6}$$

b) $2(x-1)=2(1-x)$

$$2x-2=2-2x$$

$$2x-2+2x=2-2x+2x$$

$$4x-2=2$$

$$4x-2+2=2+2$$

$$4x=4, x=1$$

c) $x(1+x)=x^2+2$

$$x+x^2=x^2+2$$

$$x+x^2-x^2=x^2+2-x^2$$

$$x=2$$

23

a) $\frac{1}{20}$

b) $\frac{2}{6}=\frac{1}{3}$

24

a) 4

b) 1

25

a) $\frac{1}{6}$

b) $\frac{1}{6}$

26

a) $\frac{1}{4}$

b) $\frac{1}{12}$

27

- a) $\frac{20}{3}$
- b) 10
- c) 10

28

- a) 6
- b) $\frac{2}{9}$
- c) $\frac{15}{4}$

29

- a) $\frac{8}{15}$
- b) $\frac{2}{9}$
- c) 1