Æfing 1.1

Röð aðgerða:
- -> sviga
- -> margföldun og deiling
- -> plús og mínus

ath! Brotastrik virkar eins og sviga!

1

$2 + 3 \cdot 2$

$2 + 6$

$= 8$

2

$6 : 2 + 1$

$3 + 1$

$= 4$

3.

$-3 \cdot 2 + 4$

$-6 + 4 = -2$

4.

$12 : 2 \cdot 3 - 1$

$6 \cdot 3 - 1$

$18 - 1 = 17$

5.

$8 - 5 \cdot 2 + 1$

$8 - 10 + 1 = -1$

6

$7 + 2 \cdot 5 - 3$

$7 + 10 - 3 = 14$

7

$2 \cdot (20 + 10 : 2)$

$2 \cdot (20 + 5)$

$2 \cdot 25 = 50$

8

$3 - 10 : 2 + 5 - 2 \cdot 4$

$3 - 5 + 5 - 8$

$= -5$

9

$2 + 3 \cdot 6 + 10 : 2$

$2 + 18 + 5 = 25$

10

$2 + 3 \cdot (6 + 10) : 2$

$2 + 3 \cdot 16 : 2$

$2 + 48 : 2$

$2 + 24 = 26$

11

$25 - (7 + 2 \cdot (-10)) - 18$

$25 - (7 + (-20)) - 18$

$7 - 20$

$25 - (-13) - 18$

$25 + 13 - 18$

$= 20$

12

$35 : 5 - 5 + 2 \cdot 15$

$7 - 5 + 30$

$= 32$

- 40 //

13 $40 - 5 - (2 \cdot 3 + 12)$

$40 - 5 - (6 + 12)$

$40 - 5 - 18$

$= 17$ //

14 $\dfrac{(3 - (5 + 5 \cdot 2))}{(22 - 28)}$

brota strik virkar eins og sögi

$\dfrac{3 - (5 + 10)}{-6} = \dfrac{3 - 15}{-6}$

$= \dfrac{-12}{-6} = 2$ //

15 $\dfrac{(2 + 3 \cdot 4)}{(6 - 2 \cdot 3)} = \dfrac{2 + 12}{6 - 6} = \dfrac{14}{0}$

deiling með núlli er ekki skilgreind

=> engin lausn

16 $(15 + 2 \cdot 10) : (-5)$

$(15 + 20) : (-5)$

$35 : (-5)$

$= -7$

17 $-2(4 + (5 \cdot 3 - 3) : 3)$

$-2(4 + (15 - 3) : 3)$

$-2(4 + 12 : 3)$

$-2(4 + 4)$

$-2 \cdot 8 = -16$

18 $\dfrac{(10 - 2 \cdot 2 \cdot 3 + 2)}{(2 - 2 - 2)} = \dfrac{(10 - 4 \cdot 3 + 2)}{(0 - 2)} = \dfrac{10 - 12 + 2}{-2}$

$= \dfrac{-2 + 2}{-2} = \dfrac{0}{-2} = 0$ //

19 $2 \cdot (9 + 7 \cdot 3) - (42 : 6 + 13 \cdot 3)$

$2 \cdot (9 + 21) - (7 + 39)$

$2 \cdot 30 - 46$

$60 - 46 = 14$ //

20

$$5 + (3 \cdot 2 + 2) - (5 \cdot 0 + 5)$$
$$5 + (6 + 2) - (0 + 5)$$
$$5 + 8 - 5 = 8$$

21

$$5 - 2(3 \cdot 4 - 3(-2 \cdot 3 + 5))$$
$$5 - 2 \cdot (12 - 3 \cdot (-6 + 5))$$
$$5 - 2 \cdot (12 - 3 \cdot (-1))$$
$$5 - 2 \cdot (12 - (-3))$$
$$5 - 2 \cdot (12 + 3)$$
$$5 - 2 \cdot 15$$
$$5 - 30 = -25$$

22

$$8 - (2 - (3 - (4 + 5)))$$
$$8 - (2 - (3 - 9))$$
$$8 - (2 - (-6))$$
$$8 - (2 + 6)$$
$$8 - 8 = 0$$

23

ekkert reiknimerki þýðir margföldun

$$-4(2 \cdot (-3)(3 + 6 : 3))$$
$$-4 \cdot (2 \cdot (-3) \cdot (3 + 2))$$
$$-4 \cdot (2 \cdot (-3) \cdot 5)$$
$$-4 \cdot (-6 \cdot 5)$$
$$-4 \cdot (-30) = 120$$

24

$$2(10 - 10 - 2(3 \cdot 5 - 2 \cdot 4))$$

24

$$2(10-(12-2(3\cdot 5-2\cdot 4)))$$
$$2\cdot(10-(12-2(15-8)))$$
$$2\cdot(10-(12-2\cdot 7))$$
$$2\cdot(10-(12-14))$$
$$2\cdot(10-(-2))$$
$$2\cdot(10+2)$$
$$2\cdot 12 = 24$$

25

$$\frac{(-5\cdot 2+1\cdot 2)}{(-1\cdot 14+2)} = \frac{-10+2}{-14+2} = \frac{-8 /_{-4}}{-12 /_{-4}} = \frac{2}{3}$$

26

$$\frac{(2\cdot(-2(2\cdot 2-2+2)))}{(-2\cdot 2+2)} = \frac{2\cdot(-2\cdot(4-2+2))}{-4+2}$$

$$= \frac{2\cdot(-2\cdot 4)}{-2} = \frac{2\cdot(-8)}{-2} = \frac{-16}{-2} = 8$$

27

$$2+3(3:2\cdot 4(2+3\cdot 2))$$
$$2+3\cdot(3:2\cdot 4\cdot(2+6))$$
$$2+3\cdot(3:2\cdot 4\cdot 8)$$

→ Líka hægt að skrifa $\frac{3}{2}\cdot\frac{4}{1}\cdot\frac{8}{1} = \frac{96}{2} = 48$

$$2+3\cdot(1,5\cdot 4\cdot 8)$$

→ ath. röð margföldunar skiptir ekki máli
þannig er $1,5\cdot 32 = 48$

$$2+3\cdot(6\cdot 8)$$
$$2+3\cdot 48$$
$$2+144 = 146$$

passið bara að deila ekki með neinu nema 2

$2 + 3 \cdot (6 \cdot 2)$

$2 + 3 \cdot 48$

$2 + 144 = 146$

þannig er $1.5 \cdot 32 = 48$

passið bara að deila ekki með neinu nema 2

---

28 $\dfrac{4 : 2 + 1 \cdot (-3)}{2 + 1 : 3 \cdot 6} = \dfrac{2 + (-3)}{2 + \frac{1}{3} \cdot 6} = \dfrac{-1}{2 + \frac{6}{3}}$

$= \dfrac{-1}{2+2} = \dfrac{-1}{4}$ //

---

29 $5(8 - 6(2 - 1.5)) : 2$

$5(8 - 6 \cdot (0.5)) : 2$

$5(8 - 3) : 2$

$5 \cdot 5 : 2$

$25 : 2 = 12.5$ //

---

30 $2 \cdot (-3) \cdot (-2) : 6 \cdot (-2(-3))$

$-2(-3) = 6$

mínus 2 sinnum mínus 3 = +6

ath hérna eru mínusarnir formerki með tölunum en ekki reiknimerki

Við sjáum það á svigunum

2 sinnum (mínus 3) sinnum (mínus 2)

$-6 \cdot (-2) : 6 \cdot (6)$

12

$2 \cdot 6 = 12$ //

---

31 $\dfrac{2 \cdot (-7) : 2 - 4}{4 \cdot (8 : 4, -2)} = \dfrac{-14 : 2 - 4}{4 \cdot (2 - 2)} = \dfrac{-11}{4 \cdot 0}$

$$\frac{\cdots}{4\cdot(8:4-2)} = \frac{\cdots}{4\cdot(2-2)} = \frac{\cdots}{4\cdot 0}$$

$\frac{-11}{0}$ → óskilgreind stærð

⇒ engin lausn

32

$$9-(4-2(3+2(10:2-3)))$$
$$9-(4-2(3+2(5-3)))$$
$$9-(4-2(3+2\cdot 2))$$
$$9-(4-2(3+4))$$
$$9-(4-2\cdot 7)$$
$$9-(4-14)$$
$$9-(-10)$$
$$9+10 = 19 //$$