

Harjoittele  
s. 19

# 6 Kokonaislukujen yhteen- ja vähennyslasku

57

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

$$\begin{aligned} \text{b) } & 4 - (-5) + (-6) \\ & = 4 + 5 - 6 \\ & = 9 - 6 \\ & = 3 \end{aligned}$$

$$\begin{aligned} \text{c) } & -7 + (+8) + (-9) \\ & = -7 + 8 - 9 \\ & = 1 - 9 \\ & = -8 \end{aligned}$$

$$\begin{aligned} \text{d) } & -10 - (-11) - (-1) \\ & = -10 + 11 + 1 \\ & = 1 + 1 \\ & = 2 \end{aligned}$$

$$\begin{aligned} \text{e) } & 2 + (-8) - (+3) \\ & = 2 - 8 - 3 \\ & = -6 - 3 \\ & = -9 \end{aligned}$$

$$\begin{aligned} \text{f) } & -10 + (+3) - (-7) \\ & = -10 + 3 + 7 \\ & = -7 + 7 \\ & = 0 \end{aligned}$$

58

$$\begin{aligned} \text{a) } & -(-15) + (-30) - (-5) \\ & = 15 - 30 + 5 \\ & = -15 + 5 \\ & = -10 \end{aligned}$$

S

$$\begin{aligned} \text{b) } & 4 - (-7) + (-4) \\ & = 4 + 7 - 4 \\ & = 11 - 4 \\ & = 7 \end{aligned}$$

I

$$\begin{aligned} \text{c) } & 7 - 3 - 9 \\ & = 4 - 9 \\ & = -5 \end{aligned}$$

N

$$\begin{aligned} \text{d) } & 3 - (-21) - 37 \\ & = 3 + 21 - 37 \\ & = 24 - 37 \\ & = -13 \end{aligned}$$

I

$$\begin{aligned} \text{e) } & 3 + (5 - 17) \\ & = 3 + (-12) \\ & = 3 - 12 = -9 \end{aligned}$$

V

$$\begin{aligned} \text{f) } & -8 - (-5) - (-11) \\ & = -8 + 5 + 11 \\ & = -3 + 11 \\ & = 8 \end{aligned}$$

A

$$\begin{aligned} \text{g) } & 11 - (+4) + (-6) - (-3) \\ & = 11 - 4 - 6 + 3 \\ & = 7 - 6 + 3 \\ & = 1 + 3 \\ & = 4 \end{aligned}$$

L

$$\begin{aligned} \text{h) } & -8 - (-13) - (+3) + (-5) \\ & = -8 + 13 - 3 - 5 \\ & = 5 - 3 - 5 \\ & = -3 \end{aligned}$$

A

$$\begin{aligned} \text{i) } & 20 - 31 - (-9) + 14 \\ & = 20 - 31 + 9 + 14 \\ & = -11 + 9 + 14 \\ & = -2 + 14 \\ & = 12 \end{aligned}$$

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SINIVALAS

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# Kokonaislukujen summa ja erotus

59 a)  $25 + (-11) = 25 - 11 = 14$

b)  $17 + (-21)$   
 $= 17 - 21$   
 $= -4$

c)  $-7 + (-13)$   
 $= -7 - 13$   
 $= -20$

d)  $-1 + (-3)$   
 $= -1 - 3$   
 $= -4$

60 a)  $18 - (-41)$   
 $= 18 + 41$   
 $= 59$

b)  $-5 - (-13)$   
 $= -5 + 13$   
 $= 8$

c)  $12 - (-4)$   
 $= 12 + 4$   
 $= 16$

d)  $-8 - (-22)$   
 $= -8 + 22$   
 $= 14$

61 a)  $40 - (11 - 5)$   
 $= 40 - (6)$   
 $= 40 - 6$   
 $= 34$

b)  $56 - (2 + 5)$   
 $= 56 - (7)$   
 $= 56 - 7$   
 $= 49$

c)  $13 - (1 - 2) + 7$   
 $= 13 - (-1) + 7$   
 $= 13 + 1 + 7$   
 $= 21$

d)  $17 - (-2) + 5 - (-9 - 2)$   
 $= 17 + 2 + 5 - (-11)$   
 $= 24 + 11$   
 $= 35$

# 6 kokonaislukujen summa ja erotus

62

$$\begin{aligned} a) & 8 + (+13) \\ & = 8 + 13 \\ & = 21 \end{aligned}$$

$$\begin{aligned} b) & -7 + (-16) \\ & = -7 - 16 \\ & = -23 \end{aligned}$$

$$\begin{aligned} c) & 2 - (+12) \\ & = 2 - 12 \\ & = -10 \end{aligned}$$

$$\begin{aligned} d) & -11 - (-1) \\ & = -11 + 1 \\ & = -10 \end{aligned}$$

63

$$\begin{aligned} a) & -2 + (-9) + (+1) + (-3) + (+7) \\ & = -2 - 9 + 1 - 3 + 7 \\ & = -11 + 1 - 3 + 7 \\ & = -10 - 3 + 7 \\ & = -13 + 7 \\ & = -6 \end{aligned}$$

$$b) \quad \underline{\underline{(-7+5) - (19-(-31))}}$$

$$\begin{aligned} & +2 + (+9) + (-1) + (+3) + (-7) \\ & = 2 + 9 - 1 + 3 - 7 \\ & = 11 - 1 + 3 - 7 \\ & = 10 + 3 - 7 \\ & = 13 - 7 \\ & = 6 \end{aligned}$$

Vastaus on summan vastaluku!

64

$$\begin{aligned} a) & 7 - (-5+9) \\ & = 7 - (+4) \\ & = 7 - 4 \\ & = 3 \end{aligned}$$

$$\begin{aligned} b) & (-7+5) - (19-(-31)) \\ & = -2 - (19+31) \\ & = -2 - (50) \\ & = -2 - 50 \\ & = -52 \end{aligned}$$

65

$$\begin{aligned} a) & -9 + (-7) + 4 + \square = -2 \\ & -9 - 7 + 4 + \square = -2 \\ & -16 + 4 + \square = -2 \\ & -12 + \underline{10} = -2 \end{aligned}$$

$$\begin{aligned} b) & -4 + (+3) + (-9) + \square = -2 \\ & -4 + 3 - 9 + \square = -2 \\ & -1 - 9 + \square = -2 \\ & -10 + \underline{8} = -2 \end{aligned}$$

$$\begin{aligned} c) & -13 + (-9) + (-2) + \square = -2 \\ & -13 - 9 - 2 + \square = -2 \\ & -24 + \underline{22} = -2 \end{aligned}$$

$$\begin{aligned} d) & -11 + (-3) + (+7) + \square = -2 \\ & -11 - 3 + 7 + \square = -2 \\ & -14 + 7 + \square = -2 \\ & -7 + \underline{5} = -2 \end{aligned}$$

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## 6 Kokonaislukujen summa ja erotus

$$\begin{aligned} S38 \quad a) & -67 - (2 + (-5)) + 64 \\ & = -67 - (2 - 5) + 64 \\ & = -67 - (-3) + 64 \\ & = -67 + 3 + 64 \\ & = -64 + 64 \\ & = 0 \end{aligned}$$

$$\begin{aligned} b) & 99 - (-31 - (-8)) - 2 \\ & = 99 - (-31 + 8) - 2 \\ & = 99 - (-23) - 2 \\ & = 99 + 23 - 2 \\ & = 122 - 2 \\ & = 120 \end{aligned}$$

S39 a) Valitsen summan/erotuksen niin, että sievennettäessä muodostuu aina summa

$$\begin{aligned} & 8 - (-4) + (10) - (-5) = \\ & 8 + 4 + 10 + 5 = \\ & 27 \end{aligned}$$

b) Aloitan pienimmällä luvulla ja valitsen summan/erotuksen niin, että sievennettäessä muodostuu aina erotus

$$\begin{aligned} & -5 + (-4) - (8) - (10) \\ & = -5 - 4 - 8 - 10 \\ & = -9 - 8 - 10 \\ & = -17 - 10 \\ & = -27 \end{aligned}$$

$$\begin{aligned} c) & -5 - (-4) + 10 - (8) \\ & = -5 + 4 + 10 - 8 \\ & = -1 + 10 - 8 \\ & = 9 - 8 \\ & = 1 \end{aligned}$$

$$S40 \quad a) -5 + (-6) = -11$$

$$\begin{aligned} b) & 6 + (+6) = 12 \quad \text{tai} \\ & 6 - (-6) = 12 \end{aligned}$$

$$\begin{aligned} c) & -8 + (+8) = 0 \quad \text{tai} \\ & -8 - (-8) = 0 \quad \text{tai} \\ & +8 - (+8) = 0 \quad \text{tai} \\ & +8 + (-8) = 0 \end{aligned}$$

$$\begin{aligned} d) & +6 + (+10) - (+4) = 12 \quad \text{tai} \\ & +6 + (+10) + (-4) = 12 \quad \text{tai} \\ & +6 - (-10) - (+4) = 12 \quad \text{tai} \\ & +6 - (-10) + (-4) = 12 \end{aligned}$$

## 6 Kokonaislukujen summa ja erotus

S41

$$\begin{aligned} \text{a) } 7 - (-5) - (\square) &= 20 \\ 7 + 5 - (\square) &= 20 \\ 12 - (\square) &= 20 \\ 12 - (\square - 8) &= 20 \end{aligned}$$

täytyy olla neg. luku

$$\begin{aligned} \text{b) } 14 + (\square) - (-7) &= 16 \\ 14 + (\square) + 7 &= 16 \\ 21 + (\square) &= 16 \\ 21 + (\square - 5) &= 16 \end{aligned}$$

neg luku

$$\begin{aligned} \text{c) } -72 - (\square) - 18 &= -34 \\ -90 - (\square) &= -34 \\ -90 - (\square - 8) &= -34 \end{aligned}$$

neg luku

S42

$$\begin{aligned} \text{a) } -1 + (-3) + (-8) \\ &= -1 - 3 - 8 \\ &= -12 \end{aligned}$$

$$\text{b) } \begin{array}{|c|c|c|} \hline -1 & -7 & -1 \\ \hline -3 & -3 & -3 \\ \hline -5 & 1 & -5 \\ \hline \end{array}$$