

Løsningsforslag

Oppgave 1. Regn ut.

- a) $-3 - 4 - (-2) = -3 - 4 + 2 = -5$
b) $(-15) : 5 - (2 + 4) = -3 - 6 = -9$
c) $-3 \cdot (-3)^2 = -3 \cdot 9 = -27$
d) $(7 + 3)^4 = 10^4 = 10\ 000$
e) $(-10) : (-12 + 7) + (-10) : 2 = (-10) : (-5) + (-10) : 2 = 2 + (-5) = 2 - 5 = -3$
f) $-(-5)^2 = -25$
g) $5 + 4 \cdot 3^2 = 5 + 4 \cdot 9 = 5 + 36 = 41$
h) $5 + 4 \cdot (5 - 2)^3 = 5 + 4 \cdot 3^3 = 5 + 4 \cdot 27 = 5 + 108 = 113$
i) $-4(10 - 3 \cdot (7 - 4) + 2) = -4(10 - 3 \cdot 3 + 2) = -4(10 - 9 + 2) = -4 \cdot 3 = -12$
j) $3(10 - (-2)(12 - 4 \cdot 2) - 5) = 3(10 - (-2)(12 - 8) - 5) =$
 $3(10 - (-2) \cdot 4 - 5) = 3(10 - (-8) - 5) = 3(10 + 8 - 5) = 3 \cdot 13 = 39$

Oppgave 2. Regn ut.

- a) $2^{-3} = \frac{1}{8}$
b) $8^{-2} = \frac{1}{64}$
c) $10^{-5} = \frac{1}{100\ 000}$
d) $5^0 = 1$
e) $(-2)^{-2} = \frac{1}{(-2)^2} = \frac{1}{4}$
f) $(-1)^{-3} = \frac{1}{(-1)^3} = \frac{1}{-1} = -1$

Oppgave 3. Skriv som potenser. (Eksempel : $4^3 \cdot 4^6 = 4^9$)

- a) $4^2 \cdot 4^3 = 4^{2+3} = 4^5$
b) $6^{10} : 6^2 = 6^{10-2} = 6^8$
c) $4^5 \cdot 4^4 \cdot 4^{-2} = 4^{5+4-2} = 4^7$
d) $4^7 : 4^{-3} = 4^{7-(-3)} = 4^{10}$
e) $3^{11} : 3^3 : 3^1 = 3^{11-3-1} = 3^7$
f) $4^3 \cdot 4^6 : 4^2 = 4^{3+6-2} = 4^7$
g) $2^7 : 4^4 : 2^5 \cdot 4^3 = 2^{7-5} \cdot 4^{-4+3} = 2^2 \cdot 4^{-1}$
h) $7^7 \cdot 3^2 : 7^{-3} \cdot 3^{-9} = 7^{7-(-3)} \cdot 3^{2-9} = 7^{10} \cdot 3^{-7}$

Oppgave 4. Regn ut.

a) $300 \cdot 10^4 = 3\,000\,000$

b) $32 \cdot 10^5 = 3\,200\,000$

c) $5.2 \cdot 10^3 = 5\,200$

d) $0.067 \cdot 10^4 = 670$

e) $0.00004 \cdot 10^2 = 0.004$

f) $570\,000 \cdot 10^{-3} = 570$

g) $34\,002 \cdot 10^{-2} = 340.02$

h) $3.57 \cdot 10^{-4} = 0.000357$

i) $0.39 \cdot 10^{-5} = 0.0000039$

j) $0.0078 \cdot 10^{-3} = 0.0000078$

Oppgave 5. Skriv tallene på standardform.

a) $8\,000 = 8 \cdot 10^3$

b) $24\,000 = 2.4 \cdot 10^4$

c) $16\,700\,000 = 1.67 \cdot 10^7$

d) $2\,500\,500\,000 = 2.5005 \cdot 10^9$

e) $26 = 2.6 \cdot 10^1$

f) $0.0079 = 7.9 \cdot 10^{-3}$

g) $0.0000602 = 6.02 \cdot 10^{-5}$

h) $0.0004 = 4 \cdot 10^{-4}$

i) $0.3 = 3 \cdot 10^{-1}$

j) $3.2 = 3.2 \cdot 10^0$