Diagnostische toets

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1 a $5(a-2b) = 5a - 10b$
b $-(3a+6b) = -3a - 6b$
c $3(a-2b) + 5(2a-6b) = 3a - 6b + 10a - 30b = 13a - 36b$
d $18 - (a-12) = 18 - a + 12 = 30 - a$

2 a $3(2a-b) - 5a = 6a - 3b - 5a = a - 3b$
b $-3(p-q) + 5(q-2p) = -3p + 3q + 5q - 10p = -13p + 8q$
c $-(p-q) + 5(p-q) = -p + q + 5p - 5q = 4p - 4q$
d $3(4a+b) - (a-b) = 12a + 3b - a + b = 11a + 4b$

3 a $5(2a+3b) - 4a - 5b = 10a + 15b - 4a - 5b = 6a + 10b$
b $-(p-q) + 5q \cdot -3 = -p + q - 15q = -p - 14q$
c $5(a-2b) - 4a \cdot -3 + 2b \cdot 5 = 5a - 10b + 12a + 10b = 17a$
d $-p - q + 5(p-q) - 3p - 2(p-q) = -p - q + 5p - 5q - 3p - 2p + 2q = -p - 4q$

4 a $5^3 = 125$
b $3^5 = 243$
c $(-2)^4 = 16$
d $(-1)^5 = -1$

5 a $6 - 3 \cdot 4^3 =$
$6 - 3 \cdot 64 =$
$6 - 192 = -186$
b $5^3 - 16 = 109$
$125 - 16 = 109$
c $(-1)^4 + 3 \cdot (-2)^5 =$
$1 + 3 \cdot -32 =$
$1 - 96 = -95$
d $5 - (3-5)^4 \cdot -2\frac{1}{2} =$
$5 - (-2)^4 \cdot -2\frac{1}{2} =$
$5 - 16 \cdot -2\frac{1}{2} =$
$5 + 40 = 45$
e $5 \cdot 4^3 : (806)^3 - 2 =$
$5 \cdot 64 : (2)^3 - 2 =$
$5 \cdot 64 : 8 - 2 =$
$320 : 8 - 2 =$
$40 - 2 = 38$
f $-8^2 : (-2)^3 - (-3)^4 =$
$-64 : -8 - 81 =$
$8 - 81 = -73$

6 a $y = -2 \cdot 2^4 + 6$
$= -2 \cdot 16 + 6$
$= -32 + 6$
$= -26$
b $y = -2 \cdot (-1)^4 + 6$
$= -2 \cdot 1 + 6$
$= -2 + 6$
$= 4$

7 a $(2\frac{3}{7})^4 = 34{,}79$

b $\dfrac{2{,}1^3 - 8}{3 - 2{,}5^4} = -0{,}03$

c $0{,}59 \cdot 2{,}3^6 - 2{,}1^5 = 46{,}50$

d $\dfrac{(-1\frac{1}{3})^4}{5 - 1{,}3^5} = 2{,}46$

8 a $3\,720\,000\,000 = 3{,}72 \cdot 10^9$

b $380\,207 = 3{,}80207 \cdot 10^5$

c $380 = 3{,}8 \cdot 10^2$

d $0{,}000275 = 2{,}75 \cdot 10^{-4}$

e $0{,}74 = 7{,}4 \cdot 10^{-1}$

f $0{,}000034 = 3{,}4 \cdot 10^{-5}$

9 a $5a^3 \cdot -2a^2 = -10a^5$

b $x^3 \cdot x^2 \cdot x = x^6$

c $4x \cdot 4x^5 = 16x^6$

d $ab^3 \cdot -5a^3b^4 = -5a^4b^7$

e $-x^3 \cdot -2x^5 = 2x^8$

f $5x^2 \cdot y \cdot x^6 = 5x^8y$

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10 a $8a^3 + 2a^5 =$ k.n.

b $8a^3 \cdot 2a^5 = 16a^8$

c $6x^4 - x^4 = 5x^4$

d $6x^4 \cdot -x^4 = -6x^8$

e $4x^3 \cdot 2x^6 = 8x^9$

f $4x^3 + x^3 = 5x^3$

11 a $(pq)^4 = p^4q^4$

b $(-3z)^3 = -27z^3$

c $(2ab)^2 \cdot -3ab = 4a^2b^2 \cdot -3ab = -12a^3b^3$

d $(b^3)^3 + b^6 + 2b^9 = b^9 + b^6 + 2b^9 = 3b^9 + b^6$

e $-a^4 \cdot (a^4)^3 = -a^4 \cdot a^{12} = -a^{16}$

f $(pq^2)^3 \cdot (p^3q^3)^4 = p^3q^6 \cdot p^{12}q^{12} = p^{15}q^{18}$

12 a $18a^6 = 9a^2 \cdot 2a^4$

b $15a^3 = 8a^3 + 7a^3$

c $a^{18} = (a^3)^6$

d $81a^{20} = (3a^5)^4$

e $8a^7 = 5a^7 - -3a^7$

f $20a^{20} = -5a^5 \cdot -4a^{15}$

13 a $\dfrac{-24a^7}{-12a^3} = 2a^4$

b $\dfrac{28a^{28}}{7a^7} = 4a^{21}$

c $\dfrac{24ab^3}{6ab^2} = 4b$

14 a $\dfrac{(3a^2)^3}{9a^3} = \dfrac{27a^6}{9a^3} = 3a^3$

b $\dfrac{(-2x^3)^4}{-2x^4} = \dfrac{16x^{12}}{-2x^4} = -8x^8$

c $\dfrac{x^6 + (5x^3)^2}{13x^2} = \dfrac{x^6 + 25x^6}{13x^2} = \dfrac{26x^6}{13x^2} = 2x^4$