

Uitwerkingen diagnostische toets hoofdstuk 1

1. a. $a \cdot (2 - b \cdot (3c - d)) = a \cdot (2 - 3bc + bd) = 2a - 3abc + abd$
b. $-(a \cdot (2b + (-1 + c))) = -(a \cdot (2b - 1 + c)) = -(2ab - a + ac) = -2ab + a - ac$

2. a. $-(-3 + 1) = -(-2) = 2$
b. $-(13 - 18) = -(-5) = 5$
c. $(8 - 7) - (7 - 8) = 1 - (-1) = 1 + 1 = 2$
d. $-(-(-1)) = -(+1) = -1$
e. $-3 \cdot (14 - 6) = -3 \cdot 8 = -24$
f. $-3 \cdot (6 - 12) = -3 \cdot -6 = 18$

3. a. $3\frac{1}{4} - 4\frac{1}{3} = 3\frac{3}{12} - 4\frac{4}{12} = -1\frac{1}{12}$
b. $3\frac{1}{4} \cdot 4\frac{1}{3} = \frac{13}{4} \cdot \frac{13}{3} = \frac{169}{12} = 14\frac{1}{12}$
c. $3\frac{1}{4} : 4\frac{1}{3} = \frac{13}{4} : \frac{13}{3} = \frac{13}{4} \cdot \frac{3}{13} = \frac{3}{4}$

4. a. $\frac{abc}{2a} = \frac{1}{2}bc$
b. $\frac{14abcd}{7cd} = 2ab$
c. $\frac{9a + 15ab}{3a} = 3 + 5b$
d. $\frac{xy - 3x(y - 1)}{2x} = \frac{y - 3(y - 1)}{2} = \frac{y - 3y + 3}{2} = \frac{-2y + 3}{2} = -y + 1\frac{1}{2}$
e. $\frac{(x - 1)y - (x + 1)y}{2yz} = \frac{xy - y - xy - y}{2yz} = \frac{-2y}{2yz} = -\frac{1}{z}$
f. $\frac{-6xy(4z - 1)}{3y} = -2x(4z - 1) = -8xz + 2x$

5. a. $\frac{a(b - c)}{2a} + \frac{1}{b} = \frac{b - c}{2} + \frac{1}{b} = \frac{b(b - c)}{2b} + \frac{2}{2b} = \frac{b(b - c) + 2}{2b} = \frac{b^2 - bc + 2}{2b}$
b. $\frac{4x + 2}{2x + 1} - \frac{3y}{xy} = \frac{2(2x + 1)}{2x + 1} - \frac{3y}{xy} = 2 - \frac{3}{x} = \frac{2x}{x} - \frac{3}{x} = \frac{2x - 3}{x}$