Gr 8 Wiskunde / Mathematics

Eksponente / Exponents (5)

1. $a^m \times a^n = a^{m+n}$
2. $a^m \div a^n = a^{m-n}$ } Alles gemeng
3. $(a^m)^n = a^{m \times n}$ } Mixed calculations
4. $a^0 = 1$
5. $a^{-m} = \dfrac{1}{a^m}$
6. $\sqrt[n]{a^m} = a^{\frac{m}{n}}$

a) $2^3 x^4 \times 2^{-1} x^3$

$= 2^{3-1} x^{4+3}$

$= 2^2 x^7 \ / \ 4x^7$

1. Kyk na tipe bewerking? X
   What type of calculation? X
   - grondtalle = / bases =
   - eksp + / exp +
2. Skryf eerste grondtal^{+eksp} neer 2^3
   Write down every first base^{exp} x^4
3. Skryf eksponente by mekaar
   Write exponents next to each other

b) $\dfrac{3^4 a^2 b^{-3}}{3^2 a^4 b^{-5}}$

$= 3^{4-2} a^{2-4} b^{-3+5}$

$= 3^2 \boxed{a^{-2}} b^2$

$= \dfrac{3^2 b^2}{a^2} \ / \ \dfrac{9b^2}{a^2}$

Ek "skuif" alles eers na "boonste vloer"
I always "move" everything to the "top"
∴ tekens verander / signs change

Wie is nie "happy" nie?
Which ones aren't "happy"?
↳ basement

c) $\dfrac{(3ab^{-2})^2}{b^{-3}} \times \left(\dfrac{3a^2 b^0}{a^4 b}\right)^3$

$= \dfrac{3^2 a^2 b^{-4}}{b^{-3}} \times \dfrac{3^3 a^6 b^0}{a^{12} b^3}$

$= 3^{2+3} a^{2+6-12} b^{-4+0+3-3}$

$= 3^5 \boxed{a^{-6}} \boxed{b^{-4}}$ Not happy?

$= \dfrac{3^5}{a^6 b^4}$