

YOU & MATHS Simplify: $\left(\frac{25x^{-9}y^8z^3}{5x^{-3}y^{-8}z^3}\right)^{-2}$.

(Write your answer without negative exponents.)

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Let's perform the simplification by first moving all variables to the numerator:

$$\left(\frac{25x^{-9}y^8z^3}{5x^{-3}y^{-8}z^3}\right)^{-2} = (5x^{-9+3}y^{8+8}z^{3-3})^{-2} = (5x^{-6}y^{16})^{-2} = 25^{-1}x^{12}y^{-32}.$$

Then, as the exercise requires, we can rewrite the expression without negative exponents:

$$25^{-1}x^{12}y^{-32} = \frac{x^{12}}{25y^{32}}.$$