

Einfaldaðu og skrifaðu svörin með jákvæðum veldisvísum.

$$1. 12x : (4x^2) = \frac{4 \cdot 3x}{4 \cdot x \cdot x} = \frac{3}{x}$$

$$2. -a \cdot 2a^3 = \underline{\underline{-2a^4}}$$

3.

$$\frac{\frac{2x^3}{y^2}}{\frac{4x}{y}} = \frac{2x^3}{y^2} \cdot \frac{y}{4x} = \frac{2x^3 y}{y^2 \cdot 4x} = \frac{2x^2 y}{y \cdot 2 \cdot 2} = \underline{\underline{\frac{x^2}{2y}}}$$

$$4. 3a^2 \cdot (-3a)^3 \cdot a^0 = -3a^2 \cdot 3^3 a^3 \cdot 1 = -3^4 \cdot a^{2+3} = \underline{\underline{-81a^5}}$$

$$5. (2a^2 \cdot (3a)^3 \cdot a^4)^4 = 2^4 a^8 (3a)^{12} \cdot a^{-16} = 2^4 \cdot a^8 \cdot 3^{12} a^{12} a^{-16} = 16 \cdot 531441 a^{(8+12-16)} = 8503056 a^4$$

$$6. ab^3 \cdot (4b)^4 : (2ab)^3 = a b^3 \cdot 4^4 b^4 \cdot (2ab)^{-3} = a \cdot b^{(3+4)} \cdot 4^4 \cdot 2^{-3} a^{-3} b^{-3} = \frac{256 \cdot a^{(1-3)} b^{(7-3)}}{8} = \frac{32 b^4}{a^2}$$

$$7. \frac{6x^7 \cdot y \cdot z^{11}}{3x^{-2} \cdot y^5 \cdot z^6} = \frac{2 \cdot \cancel{3} \cdot x^{(7+2)} \cdot y^{(1-5)} \cdot z^{(11-6)}}{\cancel{3}} = 2x^9 y^{-4} z^5 = \underline{\underline{\frac{2x^9 z^5}{y^4}}}$$

$$8. (a^2)^{-1} \cdot a^3 = (a^2) \cdot a^{-3} = a^{2-3} = a^{-1} = \underline{\underline{\frac{1}{a}}}$$

$$9. \frac{-8a^7 \cdot b^{-3}}{2a^{-2} \cdot b^{-5}} = \frac{-2 \cdot \cancel{4} \cdot a^{7+2} \cdot b^{-3+5}}{\cancel{2}} = \underline{\underline{-4a^9 b^2}}$$

$$10. \frac{4(xy)^{-1} \cdot x}{(x^2 y)^{-2} (2x)^2 \cdot y} = \frac{4x^{-1} y^{-1} \cdot x^1}{x^{-4} y^{-2} \cdot 2^2 x^2 \cdot y} = \frac{2^2 \cdot x^{(-1+1+4-2)} \cdot y^{(-1+2-1)}}{2^2} = \underline{\underline{x^2 y^0 = x^2}}$$