

$$(4) (j^5 k^4)^7 = j^{35} k^{28}$$

$$(j^5 k^4)(j^5 k^4)(j^5 k^4)(j^5 k^4)(j^5 k^4)(j^5 k^4)(j^5 k^4)$$

$$(5) (3p^6 r^2)^3 = 3^3 p^{18} r^6 \rightarrow 27 p^{18} r^6$$

$$(6) \left(\frac{4}{5} a^2\right)^5 = \frac{4^5}{5^5} a^{10} = \frac{1024}{3125} a^{10} \rightarrow \boxed{\frac{1024 a^{10}}{3125}}$$

$$\frac{4}{5} \cdot \frac{4}{5} \cdot \frac{4}{5} \cdot \frac{4}{5} \cdot \frac{4}{5} \quad a^2 \cdot a^2 \cdot a^2 \cdot a^2 \cdot a^2$$

$$(7) [(2^2)^2]^2 \rightarrow [2^4]^2 \rightarrow 2^8$$

$$(8) (2 b^3 c^4)^3 \rightarrow 2^3 b^9 c^{12} \rightarrow \boxed{8 b^9 c^{12}}$$

$$(9) (5a^2 b^3 c^4)^4 (6a^3 b^4 c^2)$$

$$(5^4 a^8 b^{12} c^{16}) (6a^3 b^4 c^2)$$

$$(625 a^8 b^{12} c^{16}) (6a^3 b^4 c^2) = \boxed{3750 a^{11} b^{16} c^{18}}$$

$$(10) \left(\frac{4}{7} m\right)^2 (49m) (17p) \left(\frac{1}{34} p^5\right)$$

$$= \left(\frac{16}{49} m^2\right) (49m)$$

$$16m^3 \cdot \frac{1}{2} p^6 = \boxed{8m^3 p^6}$$

Division

$$(11) \frac{c^4 d^4 f^3}{c^2 d^4 f} = c^2 f^2$$

$$\frac{c^4}{c^2} = \frac{\cancel{c} \cdot \cancel{c} \cdot \cancel{c} \cdot \cancel{c}}{\cancel{c} \cdot \cancel{c}}$$

$$(12) \frac{32 x^2 y^3 z^8}{-4 x y z^3} = -8 x y^2 z^5$$

$$(13) \left(\frac{24 a^{11} b^{16} c^6}{18 a^6 b^6 c^6} \right)^3 \rightarrow \left(\frac{4}{3} a^5 b^{10} \right)^3 = \frac{4^3}{3^3} a^{15} b^{30}$$

$$(14) (10 x^{-8} y^4) (4 x^3 y^{-15})$$

$$= \frac{64 a^{15} b^{30}}{27}$$

$$= 40 x^{-5} y^{-11} = \frac{40}{x^5 y^{11}}$$

$$\textcircled{15} \quad \frac{-12a^3b^0c^{-2}}{6a^5b^{-3}c^4}$$
$$= -2a^{-2}b^3c^{-6} = \frac{-2b^3}{a^2c^6}$$

$$\textcircled{16.} \quad \left(\frac{2x^2y^5z^3}{3xyz} \right)^5$$
$$= \left(\frac{2}{3} \times y^4z^2 \right)^5$$
$$= \frac{32}{243} x^5 y^{20} z^{10}$$
$$= \frac{32x^5y^{20}z^{10}}{243}$$

$$\begin{aligned} (17) \quad \left(\frac{-3x^{-6}y^{-1}z^{-2}}{6x^{-2}yz^{-5}} \right)^{-2} &= \left(\frac{-1}{2} x^4 y^{-2} z^3 \right)^{-2} \\ &= \frac{-1^{-2}}{2^{-2}} x^8 y^4 z^{-6} \\ &= \frac{2^2}{-1^2} x^8 y^4 z^{-6} \\ &= \frac{4x^8 y^4}{1z^6} \end{aligned}$$

$$(-1)^2 = 1$$