Exercise 6B

Q1

Answer :

$3a^2 \times 8a^4$

$= (3 \times 8) \times (a^2 \times a^4)$

$= 24 \times a^{(2+4)}$

$= 24a^6$

Q2

Answer :

$-6x^3 \times 5x^2$

$= (-6 \times 5) \times (x^3 \times x^2)$

$= (-30) \times (x^{(3+2)})$

$= -30x^5$

Q3

Answer :

$(-4ab) \times (-3a^2bc)$

$= (-4 \times -3) \times (a \times a^2 \times b \times b \times c)$

$= 12 \times (a^3b^2c)$

$= 12a^3b^2c$

Q4

Answer :

$(2a^2b^3) \times (-3a^3b)$

$= \left(2 \times \left(-3\right)\right) \times \left(\mathbf{a}^2 \times \mathbf{a}^3 \times \mathbf{b}^3 \times \mathbf{b}\right)$

$= \left(-6\right) \times \left(\mathbf{a}^{(2+3)} \times \mathbf{b}^{(3+1)}\right)$

$= -6\mathbf{a}^5\mathbf{b}^4$

Q5

Answer :

$= \left(\frac{2}{3} \times \frac{3}{5}\right) \times \left(\mathbf{x}^2 \times \mathbf{x} \times \mathbf{y} \times \mathbf{y}^{2)}\right)$

$= \frac{2}{5} \times \mathbf{x}^{(2+1)} \times \mathbf{y}^{(1+2)}$

$= \frac{2}{5}\mathbf{x}^3\mathbf{y}^3$

Q6

Answer :

$= \left(\frac{-3}{4} \times \frac{-2}{3}\right) \times \left(\mathbf{a} \times \mathbf{a}^2 \times \mathbf{b}^3 \times \mathbf{b}^4\right)$

$= \frac{1}{2} \times \mathbf{a}^{(1+2)} \times \mathbf{b}^{(3+4)}$

$= \frac{1}{2}\mathbf{a}^3\mathbf{b}^7$

Q7

Answer :

$= \left(\frac{-1}{27} \times \frac{-9}{2}\right) \times \left(\mathbf{a}^2 \times \mathbf{a}^3 \times \mathbf{b}^2 \times \mathbf{b} \times \mathbf{c}^2\right)$

$= \frac{1}{6} \times \mathbf{a}^{(2+3)} \times \mathbf{b}^{(2+1)} \times \mathbf{c}^2$

$= \frac{1}{6}\mathbf{a}^5\mathbf{b}^3\mathbf{c}^2$

Q8

Answer :

$$= \left(\frac{-13}{5} \times \frac{7}{3}\right) \times \left(a \times a^2 \times b^2 \times b \times c \times c^2\right)$$
$$= \frac{-91}{15} a^{(1+2)} \times b^{(2+1)} \times c^{(1+2)}$$
$$= \frac{-91}{15} a^3 b^3 c^3$$

Q9

Answer :

$$= \left(-\frac{18}{5} \times \frac{-25}{6}\right) \times \left(x^2 \times x \times z \times z^2 \times y\right)$$
$$= 15 \times x^{(2+1)} \times y \times z^{(1+2)}$$
$$= 15x^3 yz^3$$

Q10

Answer :

$$= \left(\frac{-3}{14} \times \frac{7}{6}\right) \times \left(x \times x^3 \times y^4 \times y\right)$$
$$= \frac{-1}{4} x^{(1+3)} \times y^{(4+1)}$$
$$= \frac{-1}{4} x^4 y^5$$

Q11

Answer :

$$= \left(\frac{-7}{5} \times \frac{3}{2} \times \frac{-6}{5}\right) \times \left(x^2 \times x \times x^3 \times y \times y^2 \times y^3\right)$$
$$= \frac{63}{25} \times x^{(2+1+3)} \times y^{(1+2+3)}$$
$$= \frac{63}{25} x^6 y^6$$

Q12

Answer :

$$= \left(2 \times \left(-5\right) \times \left(-6\right)\right) \times \left(a^2 \times a \times b \times b^2 \times b \times c \times c^2\right)$$
$$= 60 \times a^{(2+1)} \times b^{(1+2+1)} \times c^{(1+2)}$$
$$= 60a^3b^4c^3$$

Q13

Answer :

$$= \left(-4 \times \left(-6\right) \times \left(-3\right)\right) \times \left(x^2 \times x \times y^2 \times y\right)$$
$$= -72 \times x^{(2+1)} \times y^{(2+1)}$$
$$= -72x^3y^3$$

Q14

Answer :

$$= \left(\frac{-3}{5} \times \frac{15}{7} \times \frac{7}{9}\right) \times \left(s^2 \times s \times s \times t \times t^2 \times u \times u^2\right)$$
$$= -1 \times s^{(2+1+1)} \times t^{(1+2)} \times u^{(1+2)}$$
$$= -s^4t^3u^3$$

Q15

Answer :

$$= \left(\frac{-2}{7} \times \frac{-14}{5} \times \frac{-3}{4}\right) \times \left(u^4 \times u \times u^2 \times v \times v^3 \times v^3\right)$$
$$= \frac{-3}{5} \times u^{(4+1+2)} \times v^{(1+3+3)}$$
$$= \frac{-3}{5} u^7 v^7$$

Q16

Answer :

$$= \left(-3 \times -1 \times -1\right) \times \left(a \times a^2 \times a \times b^2 \times b^2 \times b \times c \times c^3 \times c\right.$$
$$= -3 \times a^{(1+2+1)} \times b^{(2+2+1)} \times c^{(1+4+1)}$$
$$= -3a^4b^5c^5$$

Q17

Answer :

$$= \left(\frac{4}{3} \times \frac{1}{3} \times \left(-6\right)\right) \times \left(x^2 \times x \times x \times y \times y^2 \times y \times z \times z \times z^2\right)$$
$$= \frac{-8}{3} \times x^{(2+1+1)} \times y^{(1+2+1)} \times z^{(1+1+2)}$$
$$= \frac{-8}{3} x^4 y^4 z^4$$

Q18

Answer :

$$\frac{-2}{3} a^2 b \times \frac{6}{5} a^3 b^2$$
$$= \left(\frac{-2}{3} \times \frac{6}{5}\right) \times \left(a^2 \times a^3 \times b \times b^2\right)$$
$$= \frac{-4}{5} \times a^{(2+3)} \times b^{(1+2)}$$

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