

Exponents Ex 6.1 Q6

Answer:

We have

(i)
$$\left(\frac{3}{4}\right)^2 = \frac{3}{4} \times \frac{3}{4} = \frac{9}{16}$$

(ii) $\left(\frac{-2}{3}\right)^4 = \frac{-2}{3} \times \frac{-2}{3} \times \frac{-2}{3} \times \frac{-2}{3} = \frac{16}{81}$
(iii) $\left(\frac{-4}{5}\right)^5 = \frac{-4}{5} \times \frac{-4}{5} \times \frac{-4}{5} \times \frac{-4}{5} \times \frac{-4}{5} = \frac{-1024}{3125}$

Exponents Ex 6.1 Q7

Answer:

We have

(i)
$$2^5 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 32$$
 and $5^2 = 5 \times 5 = 25$
Therefore, $32 > 25$.
Thus, $2^5 > 5^2$.

- (ii) $3^4 = 3 \times 3 \times 3 \times 3 = 81$ and $4^3 = 4 \times 4 \times 4 = 64$ Therefore, 81 > 64. Thus, $3^4 > 4^3$.
- (iii) $3^5 = 3 \times 3 \times 3 \times 3 \times 3 = 243$ and $5^3 = 5 \times 5 \times 5 = 125$ Therefore, 243 > 125. Thus, $3^5 > 5^3$.

Exponents Ex 6.1 Q8

Answer:

We have

(i)
$$(-5) \times (-5) \times (-5) = (-5)^3$$

(ii)
$$\frac{-5}{7} \times \frac{-5}{7} \times \frac{-5}{7} \times \frac{-5}{7} = \left(\frac{-5}{7}\right)^4$$

(iii)
$$\frac{4}{3} \times \frac{4}{3} \times \frac{4}{3} \times \frac{4}{3} \times \frac{4}{3} = \left(\frac{4}{3}\right)^5$$

Exponents Ex 6.1 Q9

Answer:

We have

(i) ${\boldsymbol x} \times \ {\boldsymbol x} \times \ {\boldsymbol x} \times \ {\boldsymbol x} \times \ {\boldsymbol a} \times {\boldsymbol a} \times {\boldsymbol b} \times {\boldsymbol b} = {\boldsymbol x}^4 {\boldsymbol a}^2 {\boldsymbol b}^3$

(ii)
$$\left(-2\right) \times \left(-2\right) \times \left(-2\right) \times \left(-2\right) \times a \times a \times a = \left(-2\right)^4 \times a^3$$

(iii)
$$\left(\frac{-2}{3}\right) imes \left(\frac{-2}{3}\right) imes x imes x imes x imes x imes x = \left(\frac{-2}{3}\right)^2 imes x^3$$

Exponents Ex 6.1 Q10

Answer:

We have

- (ii) Prime factorisation of $625 = 5 \times 5 \times 5 \times 5 = 5^4$

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