Powers Ex 2.2 Q1

Answer :

(i) $\left(\frac{3}{2}\right)^{-1} \times \left(\frac{3}{2}\right)^{-1} \times \left(\frac{3}{2}\right)^{-1} \times \left(\frac{3}{2}\right)^{-1} = \left(\frac{3}{2}\right)^{-1+(-1)+(-1)+(-1)}$

$\{a^m \times a^n = a^{m+n}\}$

$= \left(\frac{3}{2}\right)^{-4}$

(ii) $\left(\frac{2}{5}\right)^{-2} \times \left(\frac{2}{5}\right)^{-2} \times \left(\frac{2}{5}\right)^{-2} = \left(\frac{2}{5}\right)^{-2+(-2)+(-2)}$

$\{a^m \times a^n = a^{m+n}\}$

$= \left(\frac{2}{5}\right)^{-6}$

Powers Ex 2.2 Q2

Answer :

(i) $5^{-2} = \frac{1}{5^2}$ ---> $(a^{-n} = 1/(a^n))$

$= \frac{1}{25}$

(ii) $(-3)^2 = \frac{1}{3^2}$ ---> $(a^{-n} = 1/(a^n))$

$= \frac{1}{9}$

(iii) $\left(\frac{1}{3}\right)^{-4} = \frac{1}{(1/3)^4}$ ---> $(a^{-n} = 1/(a^n))$

$= \frac{1}{1/81}$

$= 81$

(iv) $\left(\frac{-1}{2}\right)^{-1} = \left(\frac{1}{-1/2}\right)$ ---> $(a^{-1} = 1/(a))$

$= -2$

Powers Ex 2.2 Q3

Answer :

$\left(\text{i}\right)$ $6^{-1} = \frac{1}{6}$ ---> $(a^{-1} = 1/a)$

$\left(\text{ii}\right)$ $\left(-7\right)^{-1} = \frac{1}{-7}$ ---> $(a^{-1} = 1/a)$

$\qquad\qquad\quad = \frac{-1}{7}$

$\left(\text{iii}\right)$ $\left(\frac{1}{4}\right)^{-1} = \frac{1}{1/4}$ ---> $(a^{-1} = 1/a)$

$\qquad\qquad\quad = 4$

(iv) $\left(-4\right)^{-1} \times \left(\frac{-3}{2}\right)^{-1} = \frac{1}{-4} \times \frac{1}{-3/2}$ ---> $(a^{-1} = 1/a)$

$\qquad\qquad\qquad\qquad\qquad = \frac{1}{-4} \times \frac{2}{-3}$

$\qquad\qquad\qquad\qquad\qquad = \frac{1}{6}$

(v) $\left(\frac{3}{5}\right)^{-1} \times \left(\frac{5}{2}\right)^{-1} = \frac{1}{3/5} \times \frac{1}{5/2}$ ---> $(a^{-1} = 1/a)$

$\qquad\qquad\qquad\qquad\qquad = \frac{5}{3} \times \frac{2}{5}$

$\qquad\qquad\qquad\qquad\qquad = \frac{2}{3}$

********** END *********