Powers Ex 2.1 Q3

Answer :

(i)

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

=2+3+4

=12

(ii)

$\left(\frac{1}{2}\right)^{-2}+\left(\frac{1}{3}\right)^{-2}$+14-2=11/22+11/32+11/42 --> (a^{-n} = 1/(a^n))

$=\frac{1}{1/4}+\frac{1}{1/9}+\frac{1}{1/16}$ --> ((a/b)^n = (a^n/b^n))

= 4+9+16

=29

(iii)

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

$=\frac{1}{8}\times 4$

$= 2$

(iv)

$\left(5^{-1}\times 2^{-1}\right)\div 6^{-1}=\left(\frac{1}{5}\times\frac{1}{2}\right)\div\frac{1}{6}$ --> (a^{-n} = 1/(a^n))

$=\frac{1}{10}\times 6$

$=\frac{3}{5}$

Powers Ex 2.1 Q4

Answer :

(i)

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

$: \left(\frac{1}{12}\right)^2$

$= \frac{1^2}{12^2}$ ---> ($(a/b)^n = (a^n)/(b^n)$)

$= \frac{1}{24}$

(ii)

$(5^{-1}\div 6^{-1})^3 = \left(\frac{1}{5}\div\frac{1}{6}\right)^3$ ---> ($a^{-1} = 1/a$)

$= \left(\frac{1}{5}\times 6\right)$

$= \left(\frac{6}{5}\right)^3$

$= \frac{(6)^3}{(5)^3}$ ---> ($(a/b)^n = (a^n)/(b^n)$)

$= \frac{216}{125}$

(iii)

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

$= \left(\frac{5}{6}\right)^{-1}$

$= \frac{1}{5/6}$ ---> ($a^{-1} = 1/a$)

$= \frac{6}{5}$

(iv)

$(3^{-1}\times 4^{-1})^{-1}\times 5^{-1} = \left(\frac{1}{3}\times\frac{1}{4}\right)^{-1}\times\frac{1}{5}$ ---> ($a^{-1} = 1/a$)

$= \left(\frac{1}{12}\right)^{-1}\times$

$= \frac{12}{5}$ ---> ($a^{-1} = 1/a$)

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