



Powers Ex 2.1 Q5

Answer :

$$(i) \quad \left(3^2 + 2^2\right) \times \left(\frac{1}{2}\right)^3 = (9 + 4) \times \frac{1}{8} = \frac{13}{8}$$

$$(ii) \quad \begin{aligned} (3^2 - 2^2) \times \left(\frac{2}{3}\right)^{-3} &= (9 - 4) \times \frac{1}{\left(\frac{2}{3}\right)^3} & \longrightarrow (a^{-1} = 1/(a^n)) \\ &= 5 \times \frac{1}{8/27} & \longrightarrow ((a/b)^n = (a^n)/(b^n)) \\ &= 5 \times \frac{27}{8} \\ &= \frac{135}{8} \end{aligned}$$

$$(iii) \quad \begin{aligned} \left(\left(\frac{1}{3}\right)^{-3} - \left(\frac{1}{2}\right)^{-3}\right) \div \left(\frac{1}{4}\right)^{-3} &= (3^3 - 2^3) \div 4^3 & \longrightarrow (a^{-n} = 1/(a^n)) \\ &= (27 - 8) \div 64 \\ &= 19 \times \frac{1}{64} \\ &= \frac{19}{64} \end{aligned}$$

$$(iv) \quad \begin{aligned} \left(2^2 + 3^2 - 4^2\right) \div \left(\frac{3}{2}\right)^2 &= (4 + 9 - 16) \times \frac{9}{4} & \longrightarrow ((a/b)^n = (a^n)/(b^n)) \\ &= -3 \times \frac{9}{4} \\ &= \frac{-27}{4} \end{aligned}$$

Powers Ex 2.1 Q6

Answer :

Using the property $a^{-1} = 1/a$ for every natural number a , we have $5^{-1} = 1/5$ and $(-7)^{-1} = -1/7$. We have to find a number x such that

$$\frac{1}{5} \times x = \frac{-1}{7}$$

Multiplying both sides by 5, we get:

$$x = \frac{-5}{7}$$

Hence, the required number is $-5/7$.

***** END *****