Related Questions with Solutions

Questions

Quetion: 01

If $S = \dfrac{1}{3} + \dfrac{1}{3^2} + \dfrac{1}{3^3} + \ldots$ upto ∞ , then

A. $(0.25)^{\log_2(S)} = 4$

B. $(0.008)^{\log_5(S)} = 8$

C. $(0.008)^{\log_5(S)} = 4$

D. $(0.25)^{\log_2(S)} = 8$

Solutions

Solution: 01

We have, $S = \dfrac{1/3}{1 - \frac{1}{3}} = \dfrac{1}{2}$

Thus, $(0.25)^{\log_2 S} = (0.5)^{2\log_2(1/2)} = (0.5)^{-2} = 4$

and $(0.008)^{\log_5(S)} = (0.2)^{3\log_5(1/2)} = \dfrac{1}{5^{3\log_5 2}} = 8$

Correct Options

Answer:01

Correct Options: A, B