## Sequence and Series - Class XI

### Related Questions with Solutions

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### Questions

**Quetion: 01**

If the sum of an infinite GP is 20 and sum of their square is 100 then common ratio will be =

A. 1/2

B. 1/4

C. 3/5

D. 1

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### Solutions

**Solution: 01**

$S_\infty = 20 \quad \Rightarrow \frac{a}{1-r} = 20 \qquad (i)$

and $a^2 + (ar)^2 + (ar^2)^2 + \ldots + \infty = 0 \qquad (ii)$

$\frac{a^2}{1-r^2} = 100$

$\frac{(i)^2}{(ii)}$

$\frac{(1-r)(1+r)}{(1-r)^2} = \frac{400}{100} = 4$

$\frac{1+r}{1-r} = 4$

$\Rightarrow 1 + r = 4 - 4r$

$\Rightarrow r = \frac{3}{5}$

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### Correct Options

Answer:01

Correct Options: C