

## Infinite Series - Class XI

### Related Questions with Solutions

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#### Questions

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##### Question: 01

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The validity of the expansion  $\frac{1}{(4 - 3x^2)^{1/3}}$  is

A.  $-\frac{2}{3} < x < \frac{2}{3}$

B.  $|x| < \frac{2}{\sqrt{3}}$

C.  $-\frac{2}{\sqrt{3}} < x < \frac{2}{3}$

D.  $\frac{2}{\sqrt{3}} < x < \frac{4}{3}$

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#### Solutions

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##### Solution: 01

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Consider  $[4 - 3x^2] = 4 \left(1 - \frac{3}{4}x^2\right) = 4 \left(1 + \left(\frac{-3}{4}\right)x^2\right)$

∴ For validity taking

$$\left|-\frac{3}{4}x^2\right| < 1 \text{ or } |x^2| < \frac{4}{3}$$

$$\text{or } |x|^2 < \frac{4}{3} \text{ or } |x| < \frac{2}{\sqrt{3}}$$

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#### Correct Options

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Answer:01

Correct Options: B