

## MATHS

### NCERT - FULL MARKS MATHEMATICS(TAMIL)

#### APPENDIX 1 INFINITE SERIES

##### Example

1. Expand  $\left(1 - \frac{x}{2}\right)^{-\frac{1}{2}}$ , when  $|x| < 2$ .

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2. Find the sum of infinity of the G.P.,

$$\frac{-5}{4}, \frac{5}{16}, \frac{-5}{64}, \dots$$

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3. Find the coefficient of  $x^2$  in the expansion of  $e^{2x+3}$  as a series in powers of  $x$ .

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4. Find the value of  $e^2$ , rounded off to one decimal place.

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5. If  $\alpha, \beta$  are the roots of the equation  $x^2 - px + q = 0$ , prove that

$$\log_e(1 + px + qx^2) = (\alpha + \beta)x - \frac{\alpha^2 + \beta^2}{2}x^2 + \frac{\alpha^3 + \beta^3}{3}x^3 - \dots$$

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6. Expand  $\left(1 - \frac{x}{2}\right)^{-\frac{1}{2}}$ , when  $|x| < 2$ .



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7. Find the sum of infinity of the G.P.,

$$\frac{-5}{4}, \frac{5}{16}, \frac{-5}{64}, \dots$$



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8. Find the coefficient of  $x^2$  in the expansion of  $e^{2x+3}$  as a series in powers of  $x$ .



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9. Find the value of  $e^2$ , rounded off to one decimal place.



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10. If  $\alpha, \beta$  are the roots of the equation  $x^2 - px + q = 0$ , prove that

$$\log_e (1 + px + qx^2) = (\alpha + \beta)x - \frac{\alpha^2 + \beta^2}{2}x^2 + \frac{\alpha^3 + \beta^3}{3}x^3 - \dots$$



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