Binomial Theorem - Class XI

Related Questions with Solutions

Questions

Quetion: 01

Numerically greatest term in the expansion of $(2 + 3x)^9$ when $x = \frac{3}{2}$ is

A. $\frac{5}{2}3^{13}$

B. $\frac{9}{2}3^{13}$

C. $\frac{11}{2}3^{13}$

D. $\frac{7}{2}3^{13}$

Solutions

Solution: 01

$(2+3x)^9$ when $x = \frac{3}{2}$

$m = \frac{9+1}{1+\left|\frac{2}{|3\cdot\frac{3}{2}|}\right|} = \frac{10}{1+\frac{4}{9}} = \frac{90}{13}$

Numerically Greatest Term is $T_7 = {}^9C_6(2)^3\left(3.\frac{3}{2}\right)^6$

$= 84 \times \frac{8 \times 3^{12}}{2^6} = 7.\frac{3^{13}}{2}$

Correct Options

Answer:01

Correct Options: D