BINOMIAL THEOREM

QUESTION 1

Find, in ascending powers of x, the first four terms in the expansion of $(2-3x)^6$.

QUESTION 2

Find, in ascending powers of x, the first four terms in the expansion of $\left(2x+\frac{y}{4}\right)^6$.

QUESTION 3

Evaluate the following without using a calculator

(a) $\binom{10}{3}$

(b) $\binom{n+2}{2}$ in terms of n

(c) $\binom{n+1}{n}$ in terms of n

(d) $\binom{n}{n}$ in terms of n

QUESTION 4

Find, in ascending powers of x, the first three terms in the expansion of $\left(2-\frac{x}{2}\right)^6$. Hence, find the coefficient of x^2 in the expansion of $(x+1)^2\left(2-\frac{x}{2}\right)^6$.

QUESTION 5

In the expansion of $(1-2x)^n$, where n is a positive integer, in the ascending powers of x, the coefficient of the third term is 112. Find the value of n.

QUESTION 6

Find the term independent of x in the expansion of $\left(x^3-\frac{1}{2x}\right)^{12}$.

QUESTION 7

Find the value of n in $(1+2x)^n$, given that the coefficients of x^2 and x^3 are in the ratio of $3:14$.

QUESTION 8

Obtain the first 4 terms in the expansion, in ascending powers of x, of $(1-4x)^5$. Hence, find the value of $(0.96)^5$ correct to 3 decimal places.