

Find the Coefficient of terms

1) Find the term in x^4 in the expansion of $\left(3x^2 - \frac{2}{x}\right)^5$.

2) Find the term in x^3 in the expansion of $\left(\frac{2}{3}x - 3\right)^8$.

3) Find the term containing x^3 in the expansion of $(2 - 3x)^8$.

4) Find the term containing x^{10} in the expansion of $(5 + 2x^2)^7$.

5) Consider the expansion of $\left(3x^2 - \frac{1}{x}\right)^9$. Find the constant term in this expansion.

6) Complete the following expansion.

$$(2 + ax)^4 = 16 + 32ax + \dots$$

7) Determine the constant term in the expansion of $\left(x - \frac{2}{x^2}\right)^9$.

8) Use the binomial theorem to complete this expansion.

$$(3x + 2y)^4 = 81x^4 + 216x^3y + \dots$$

9) The coefficient of x in the expansion of $\left(x + \frac{1}{ax^2}\right)^7$ is $\frac{7}{3}$. Find the possible values of a .

10) Find the coefficient of the x^3 term in the expansion of $\left(2 - \frac{3x}{2}\right)^6$.

Answer to assignment: Binomial Theorem

1) $1080x^4$

2) $-4032x^3$

3) $-48384x^3$

4) $16800x^{10}$

5) 2268

6) $24a^2x^2 + 8a^3x^3 + a^4x^4$

7) -672

8) $81x^4 + 216x^3y + 216x^2y^2 + 96xy^3 + 16y^4$

9) 3

10) $-540x^3$

