INTERNATIONAL INDIAN SCHOOL BURAIDAH

Worksheet for the Academic Year 2025-26

CLASS:11 SUBJECT: Mathematics DATE: 6/07/25

LESSON : BINOMIAL THEOREM

1. Using binomial theorem, write down the expansion of the following:-

a) $(x^3 - 3y)^5$; $b)\ \left(2a - \frac{b}{a}\right)^7$; $c)\left(\frac{x}{3} - \frac{3}{x}\right)^6$; $d)(1 + x + x^2)^4$;

$e)(1 + 2x - 3x^2)^5$ f) $(\sqrt[3]{x} - \sqrt[3]{y})^5$

2. Evaluate the following :-

a) $\left(\sqrt{3} + 1\right)^5 + \left(\sqrt{3} - 1\right)^5$ $b)\ \left(3 + \sqrt{2}\right)^6 - \left(3 - \sqrt{2}\right)^6$ $c)\ (0.99)^3 + (1.01)^3$

3. Using binomial theorem, prove that 23n – 7n – 1 is divisible by 49, where n € N.

4. Using binomial theorem determine which number is larger $(1.2)^{4000}$ or 800?

5 . Prove that there is no term involving x^6 in the expansion of $(2x^2 - \frac{3}{x})^{11}$