NCERT Solutions Class 11 Maths
Chapter 7: Binomial Theorem
Miscellaneous Exercise on Chapter 7

Document Information:
Class: 11 | **Subject:** Mathematics | **Chapter:** 7 | **Exercise:** misc
Total Questions: 6 | **Academic Year:** 2025-26
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Complete Solutions

Question 1

QUESTION

If a and b are distinct integers, prove that a - b is a factor of a^n - b^n, whenever n is a positive integer.

ANSWER

Use expansion: a^n = (a - b + b)^n. Hence a^n - b^n is divisible by a - b.

Question 2

QUESTION

Evaluate (√3 + √2)^6 - (√3 - √2)^6.

ANSWER

396√6

Question 3

QUESTION

Find the value of (a^2 + √a^2 - 1)^4 + (a^2 - √a^2 - 1)^4.

ANSWER

2a^8 + 12a^6 - 10a^4 - 4a^2 + 2

Question 4

QUESTION

Find an approximation of (0.99)^5 using the first three terms of its expansion.

ANSWER

0.9510

Question 5

QUESTION

Expand using Binomial Theorem: \left(1 + (x)/(2) - (2)/(x)\right)^4, x ≠ 0.

ANSWER

(16)/(x) + (8)/(x^2) - (32)/(x^3) + (16)/(x^4) - 4x + (x^2)/(2) + (x^3)/(2) + (x^4)/(16) - 5

Question 6

QUESTION

Find the expansion of (3x^2 - 2ax + 3a^2)^3 using binomial theorem.

ANSWER

27x^6 - 54ax^5 + 117a^2x^4 - 116a^3x^3 + 117a^4x^2 - 54a^5x + 27a^6

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