

Chapter 2 Class 9 Polynomials - Case Based Question Worksheet 1 by *teachoo*

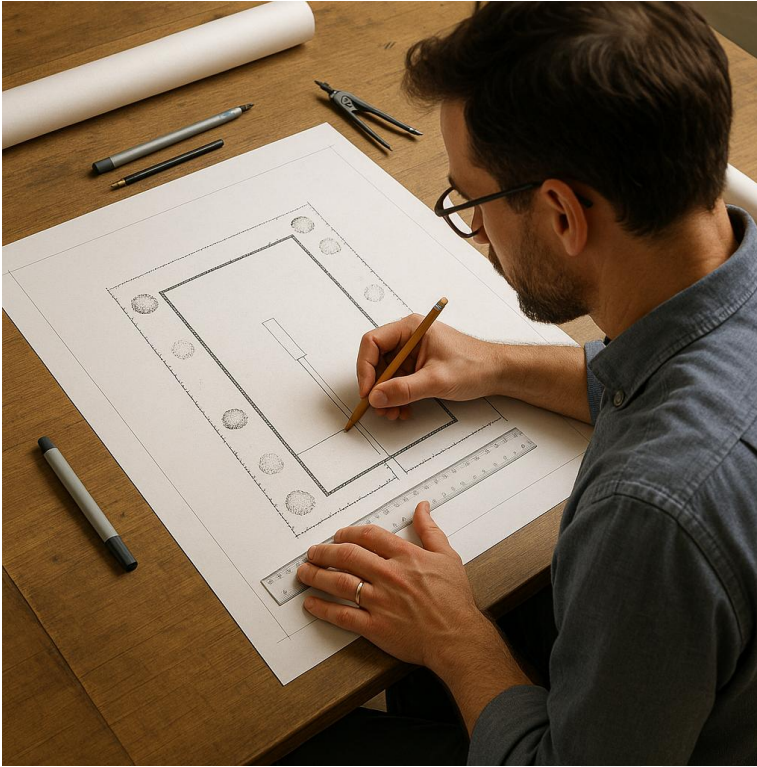
Chapter: [Chapter 2 Class 9 Maths – Polynomials](#)

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Case Study 1: The Rectangular Plot



An architect is designing a rectangular plot of land. The area of the plot is given by the polynomial $A(x) = 2x^2 + 7x + 3$.

1. (1 Mark) What type of polynomial represents the area?
2. (1 Mark) If $x = 5$ meters, what is the area of the plot?
3. (1 Mark) Write a polynomial expression for the perimeter of the plot.
4. (2 Marks) Find the expressions for the length and breadth of the plot.

Case Study 2: The Open Box



A company manufactures cardboard boxes. They start with a square piece of cardboard of side x . They cut out small squares of side length 5 cm from each corner to create an open box.

1. (1 Mark) Write the polynomial expression for the length of the base of the open box.
2. (1 Mark) Write the polynomial expression for the height of the open box.
3. (1 Mark) If the original piece of cardboard was 20 cm by 20 cm , what is the volume of the box?
4. (2 Marks) Write the polynomial expression for the total surface area of the open box (base +4 sides).

Case Study 3: The Profit Model



The weekly profit of a small startup is modelled by the polynomial $P(x) = -x^3 + 9x^2 - 23x + 15$, where x is the number of units produced in hundreds.

1. (1 Mark) What is the profit (or loss) if the company produces 0 units?
2. (1 Mark) Verify that producing 100 units ($x = 1$) is a break-even point.
3. (1 Mark) What does the degree of the polynomial signify about the profit model?
4. (2 Marks) Find the other two production levels (in hundreds) where the company also breaks even.

Important links

- Answer of this worksheet - <https://www.teachoo.com/25602/5367/Case-Based-Questions---Worksheet-1/category/Teachoo-Questions---Case-Based/>
- Full Chapter with Explanation, Activity, Worksheets and more – <https://www.teachoo.com/subjects/cbse-maths/class-9th/ch2-9th-polynomials/>
- Science Class 9 – <https://www.teachoo.com/subjects/science/class-9/>

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