1. **Arithmetic Progressions (AP):**
   a. Find the common difference in the AP: $5, 9, 13, 17, \ldots$.
   b. Determine the 10th term of the AP: $3, 7, 11, 15, \ldots$.

2. **Triangles and Circles:**
   a. In $\triangle ABC$, if $\angle A = 60^\circ$, $\angle B = 30^\circ$, and $BC = 8\, \text{cm}$, find the lengths of AB and AC.
   b. Find the area of a sector of a circle with radius $6\, \text{cm}$ and central angle 45°.

3. **Surface Areas and Volumes:**
   a. The diameter of a cylinder is $14\, \text{cm}$, and its height is $20\, \text{cm}$. Find its total surface area.
   b. A cone has a radius of $5\, \text{cm}$ and slant height of $13\, \text{cm}$. Calculate its volume.

4. **Statistics and Probability:**
   a. Given the data set: $12, 15, 18, 20, 22, 25, 28, 30$, find the mean and median.
   b. A bag contains 4 red balls and 6 green balls. If a ball is drawn at random, find the probability of getting a green ball.

5. **Quadratic Equations:**
   a. Solve the quadratic equation $x^2 - 6x + 9 = 0$ by completing the square.
   b. Discuss the discriminant and its role in determining the nature of roots for a quadratic equation.

6. **Coordinate Geometry:**
   a. Determine the coordinates of the midpoint of the line segment joining $(-3, 2)$ and $(5, -4)$.
   b. Prove that the points $(-1, 2)$, $(3, -4)$, and $(5, 6)$ form an isosceles triangle.

7. **Circles and Constructions:**
   a. Draw a circle of radius $4\, \text{cm}$ and construct its diameter.
   b. Given a line segment of length $6\, \text{cm}$, construct an equilateral triangle on it.