1. If $A = \begin{bmatrix} 5 & -6 \\ 7 & 2 \end{bmatrix}$, **prove that** $OA = AO$, **where** O **is a null matrix.**

2. Solve the simultaneously equation.

$$3x = 5 - 4y$$
$$5y = 8 - 2x$$

3. A rod is folded in such a way that it makes an angle of 45^0**. In order to make it straight what will be the measure of the angle?**

4. With reference of figure state the kinds ofthe following pairs of angles:

(i) $< 1, < 3$
(ii) $< 3, < 4$
(iii) $< 3, < 7$
(iv) $< 4, < 6$
(v) $< 1, < 7$.

5. In the adjoining figure are shown a quadrilateral $ABCD$ **and four triangles** PAB, PBC, PCD, PDA. **Which pair oftriangles appears to be congruent? Also name the relevant corresponding in which a pair is congruent.**

6. Prove that a diagonal of a rectangledivides it into two congruent triangles.

7. Elements of which of the following sets canrepresent the lengths of the sides of theright-angled triangles?

$$A = \{5, 6, 7\}, B = \{2.5, 6, 6.5\}$$
$$\overline{C} = \{1, 10, 3\sqrt{11}\}, D = \{1, 1, \sqrt{2}\}$$

8. The radius of a circle is 5cm. A chord is at a distance of 4cm from the centre. Find thelength of the chord.

9. Find the area of a 120^0 **sector and the length of the corresponding arc of a circle of radius 9m.**

10. Annual income of a person from salary is 39145 rupees and the annual income from other sources is 6455 rupees. Find his income tax for the year when he has paid Rs.300 to Zakat fund and Rs.200 to wealth tax.

11. A factory owner fixed the following rated of commission: 15% commission on goods, the worth of which is upto 15,000 rupees; 20% on goods, theworth of which is more than 15,000 rupees. An agent bought goods Rs.26,500. Find his commission.

12. Evaluate $-3P + 2Q - R$, **when**

$$P = -3x^3 + 4x^2 - 1$$
$$Q = -7x + 2x^3 - 8$$
$$R = x^3 - x^2 + x - 1$$

13. Simplify:

$(16y^8z^5 - 48y^7z^6 - 141y^3z^4) \div (8y^2z^4)$

14. Find the value of $x^4 + \frac{1}{x^4}$, **when** $x - \frac{1}{x} = 1$.

15. Evaluate with the help of a formula:

$(3.65)^2 + 2 \times 3.65 \times 2.35 + (2.35)^2$

16. Find the value of $x^3 + y^3$ **when** $x + y = 5$ **and** $xy = 6$.

17. Express in the form of a cube (orally).

(i) $x^3 + 3x^2, 4y + 3, x.(4y)^2 + (4y)^3$.

18. Simplify with the help of formulae (orally)

(i) $(c + d)(c^2 - cd + d^2)$

(ii) $(x - y)(x^2 + xy + y^2)$

19. Evaluate with the help of a formula

$$\frac{(416)^3 + (84)^3}{(416)^2 - 416 \times 84 + (84)^2}$$