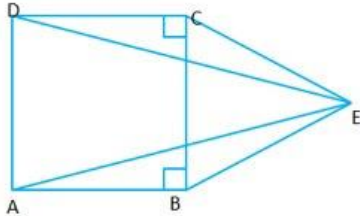


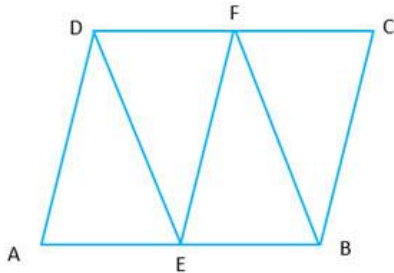
Marking Scheme: Four questions carry 10 marks each. Questions have 3 subparts each. Subparts (a) and (b) carry 3 marks each and subpart (c) carries 4 marks.

Question 1:

- a. In the adjoining figure, ABCD as a square and CEB is an isosceles triangle in which $EC = EB$ show:
 (a) $\triangle DCE \cong \triangle ABE$
 (b) $AE = DE$

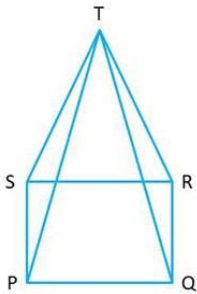


- b. The sides AB and, CD of a parallelogram ABCD are bisected at E and F.
 Prove that EBFD is a parallelogram.

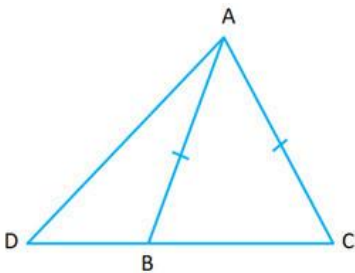


Question 2:

- a. In the adjoining figure, PQRS is a square and SRT is an equilateral triangle. Prove that
 (i) $PT = QT$
 (ii) $\angle TQR = 15^\circ$



- a. If D is any point on the base BC produced, of an isosceles triangle ABC.
 Prove that $AD > AB$.



Question 3:

- a. The following table shows the number of plants in 20 houses in a group:

Number of Plants	0 - 2	2 - 4	4 - 6	6 - 8	8 - 10	10 - 12	12 - 14
Number of Houses	1	2	2	4	6	2	3

Find the mean number of plants per house.

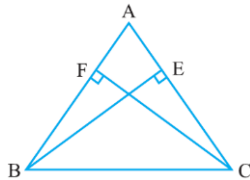
- b. AB and CD are two chords on the same side of the centre of a circle such that $AB = 6$ cm and $CD = 12$ cm. $AB \parallel CD$. If the distance between AB and CD is 3 cm, find the radius of the circle.

Question 4:

- a. ABC is a triangle in which altitudes BE and CF to sides AC and AB are equal. Show that:

(a) $\triangle ABE \cong \triangle ACF$

(b) $AB = AC$, i.e., ABC is an isosceles triangle.



- b. A girl fills a cylindrical bucket 32 cm in height and 18 cm in radius with sand. She empties the bucket on the ground and makes a conical heap of the sand. If the height of the conical heap is 24 cm. Find:
- Its radius and
 - Its slant height. (Leave your answer in square root form).