

I. Choose the correct answer:

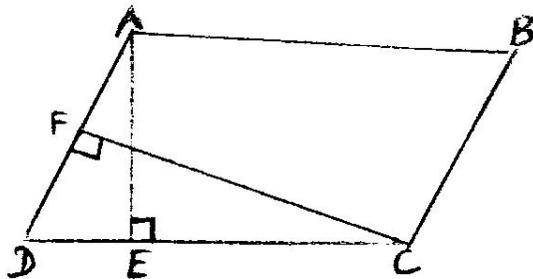
4x1=4

- Two parallelograms are on equal bases and between the same parallels. Find the ratio of their areas
a)1:2 b)1:1 c)2:1 d)3:1
- The area of ΔABC is 400cm^2 . If AD is a median of ΔABC , then the area of ΔABD (in cm^2) is -----
a)800 b)400 c)200 d)150
- If only one pair of opposite sides of a quadrilateral are parallel, then the quadrilateral is a -----
a)Parallelogram b)Trapezium c)Rhombus d)Rectangle.
- A coin is tossed once, then the probability of getting tail is -----
a)1 b) $\frac{1}{2}$ c)2 d) $\frac{1}{3}$

II. Answer the following:

4x2=8

- Diagonals of a quadrilateral PQRS bisect each other. If $\angle P=40^\circ$, determine $\angle Q$.
- In a throw of a die, what is the probability of getting an odd prime number?
- Prove that median of a triangle divides it into two triangles of equal area.
- In figure, ABCD is a parallelogram, $AE \perp DC$ and $CF \perp AD$. If $AB=16\text{cm}$, $AE=8\text{cm}$ and $CF=10\text{cm}$ find AD.



III. Answer the following :

4x3=12

- A survey was conducted in a locality regarding the eating habits of persons. Out of 450 persons, if 175 found to be pure vegetarian, what is the probability of person, selected at random of being non-vegetarian?

10. The angles of a quadrilateral are $4x^\circ$, $7x^\circ$, $15x^\circ$ and $10x^\circ$. Find the smallest and largest angle of the quadrilateral.

11. D and E are points on sides AB and AC respectively of ΔABC such that $\text{ar}(\Delta DBC) = \text{ar}(\Delta EBC)$ Prove that $DE \parallel BC$

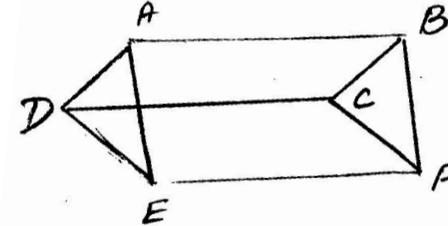
12. Show that each angle of a rectangle is a right angle.

IV. SOLVE:

4x4=16

13. Show that the line segments joining the mid-points of the opposite sides of a quadrilateral bisect each other.

14. In figure, ABCD, DCFE and ABFE are parallelograms. Show that $\text{ar}(\Delta ADE) = \text{ar}(\Delta BCF)$.



15. At a hospital, a doctor compiled the following data about 400 patients whom he could cure of hepatitis:

Time for cure	No.of. patients
<1 month	210
1-2 months	105
2-3 months	60
>3 months	25

Another case of hepatitis is reported. What is the probability that this patient will be cured in

- Less than 2 months?
- 1 month or more but not more than 3months.

16. ABCD is a parallelogram in which P is the mid-point of DC and Q is a Point on AC such that $CQ = \frac{1}{4} AC$. If PQ produced meets BC at R. Prove that R is the mid-point of BC.

