## 1. Coordinates and Graphics

1. A triangle ABC is formed by the points A (3,4), B (-7,2), and C (1,-2).

   (a) Find the coordinates of the mid-points k of AB and p of AC   (1 mk)

   (b) Find the equation of the perpendicular bisector of the line kp (2 mks)

2. The size of an interior angle of a rectangular polygon is 6 ½ times that of its exterior angle. Determine the number of sides of the polygon.

3. The sum of interior angles of two regular polygons of sides n and n + 2 are in the ratio 3:4. Calculate the sum of the interior angles of the polygons with n sides

4 . The area of a rhombus is 60cm². Given that one of its diagonals is 15cm long. Calculate the perimeter of the rhombus.

5. In the figure below AE is parallel to BD. BC = BD, AB = 7.25cm, AE = 15.25cm and ED = 5.25 cm
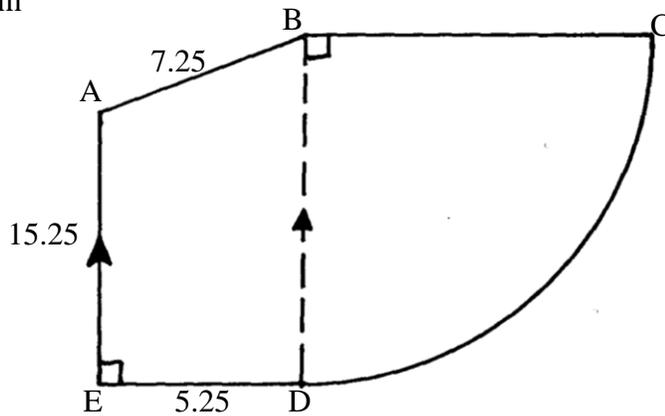
Find the perimeter of the figure .

6. The figure below shows a trapezium ABCD in which side AB is perpendicular to both AD and BC.   Side AD=17cm, DC=10cm
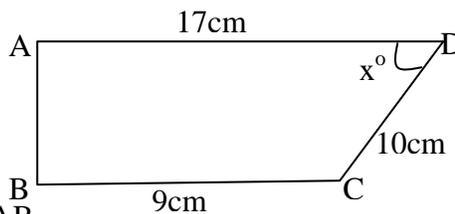

   (i) What is the length of side AB
   (ii) Find the value of $\cos(90^0 - x^o)$ in the form $\underline{a}$ where a   and b are integers
                                                        b

7. The size of an interior angle of a regular polygon is $3x^o$ while its exterior angle is $(x-20)^{o.}$ Find the number of sides of the polygon

8.
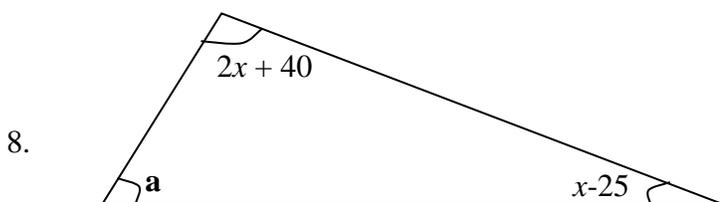
   In the figure above, angle **a** is half the sum of the other angles. Evaluate the triangle

9. The sum of the interior angles of an **n**-sided polygon is 1260°. Find the value of **n** and hence deduce the polygon

10. Giving reason, find the angle marked **n**
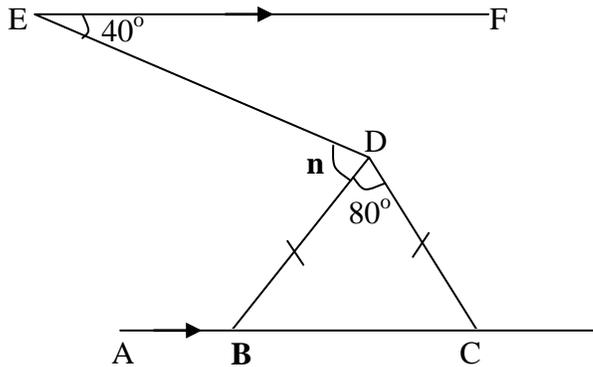
11. Solve for **y** in the equation $125^{y+1} + 5^{3y} = 630$

12. The interior angle of a regular polygon is 108° larger than the exterior angle. How many sides has the polygon?

13. The interior angle of a regular polygon is 4 times the exterior angle. How many sides has the polygon

14. In the figure below ABCD is a trapezium with DC parallel to AB. DC = 5cm, CB = 4cm, BD = 8cm and AB = 10cm
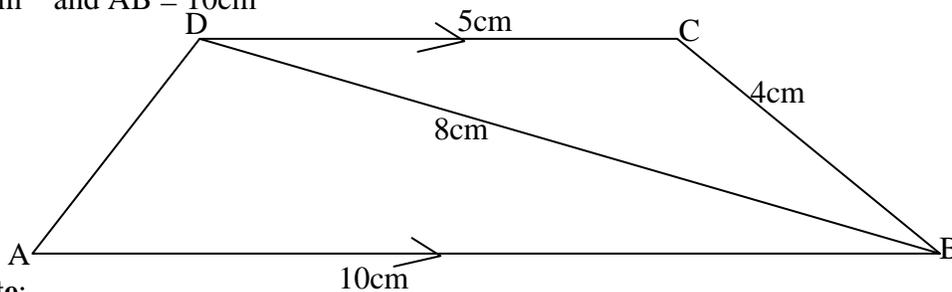
Calculate:
(a) the size of angle BDC
(b) the area of triangle ABD

15. In the figure below, DE bisects angle BDG and AB is parallel to DE. Angle DCF = 60° and angle CFG = 100°
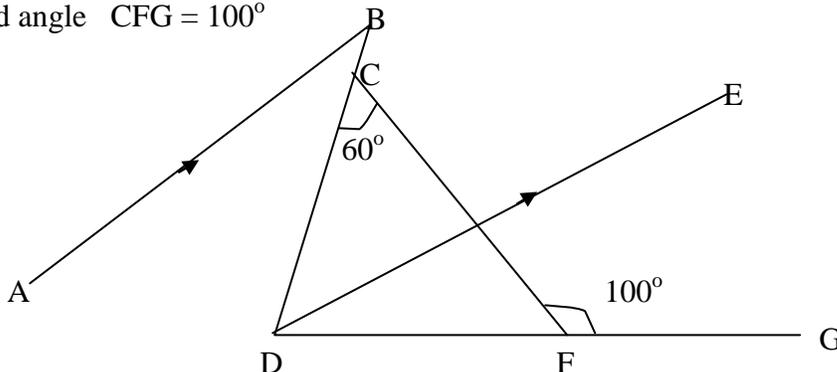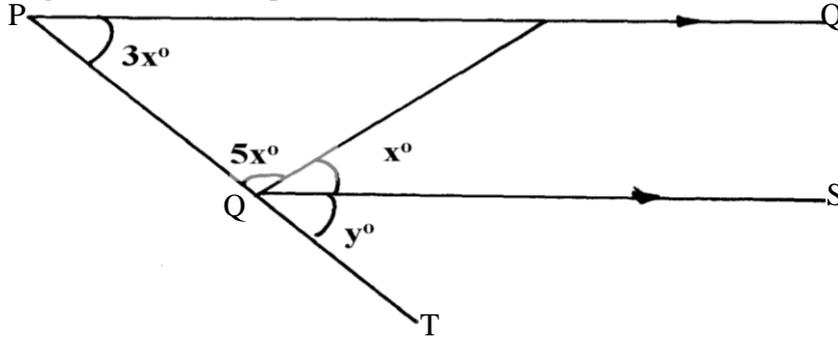
Find the value of angle:-

(a) CDF

(b) ABD

16. The size of an interior angle of a regular polygon is $4x°$, while its exterior angle is $(x - 30)°$. Find the number of sides of the polygon

17. The sum of interior angles of a polygon is $1440°$. Find the number of sides of the polygon hence name the polygon

18. In the figure below PQ is parallel to RS. Calculate the value of **x** and **y**

19. The interior angle of a n-sided regular polygon exceeds its exterior angle by $132°$. Find the value of n