OUR OWN HIGH SCHOOL, AL WARQA'A, DUBAI

## GRADE: X - AREAS RELATED TO CIRCLES

ASSIGNMENT: 1

1. Sum of radii of two circles is 140 cm and the difference of their circumferences is 88 cm. Find the diameters of the circles.(154, 126)
2. The circumference of a circle exceeds its diameter by 16.8 cm. Find the radius of the circle.(3.92)
3. Area of a circular field is 88704 m². How long will it take to go 10 rounds at the speed of 4.5 km/h?(2h 20m 48s)
4. A race track is in the form of a ring whose inner circumference is 352 m and the outer circumference is 396 m. Find the width of the track.(7 m)
5. The area of a circle inscribed in an equilateral triangle is 154 cm². Find the perimeter of the triangle.(72.7 cm)

ASSIGNMENT: 2

1. What is the area of shaded region if ABCD is a square of side 14 cm?(Ans: 42 cm²)

2. If the perimeter of the shaded region is 132 cm, find the area of the shaded region. (Ans: 173.25 cm²)
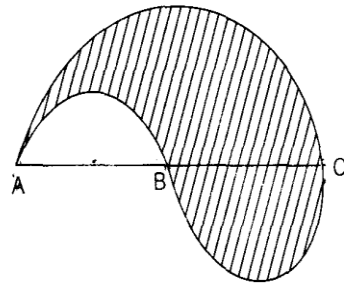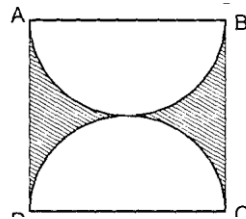
3. In the given figure, ABC is a right angled triangle, $\angle B = 90^0$, AB = 28 cm and BC = 21 cm. With AC as diameter a semicircle is drawn and BC as radius a quarter circle is drawn. Find the area of the shaded region.(Ans: 428.75 cm²)
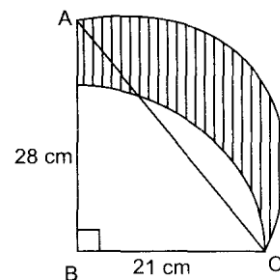
4. From a thin metallic piece, in the shape of a trapezium ABCD, in which AB // CD and $\angle BCD = 90^0$, a quarter circle BEFC is removed. If AB = BC = 3.5 cm and DE = 2 cm, calculate the area of the remaining piece of the metal sheet. (Ans: 6.125 cm²)
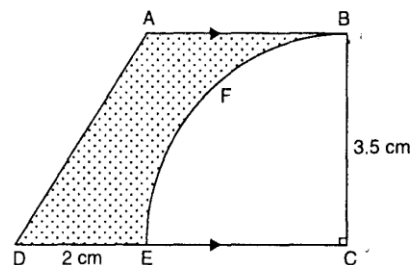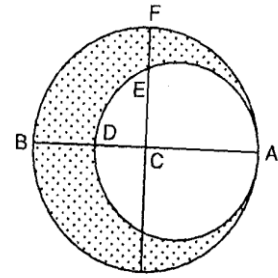
Fig. 13.75

5. A crescent is formed by two circles
   which touch at A.C is the centre of the larger circle and
   AB is perpendicular to
   CF. If BD = 9 cm and EF = 5 cm, find the
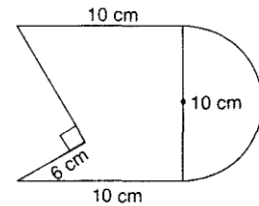   area of the shaded region.(Ans: 643.5 cm²)


   ASSIGNMENT: 3

1. The boundary of the shaded region
    in the given diagram consists of
    four semicircles and two quadrants.
    If OP = OQ = OR = OS = 7 cm, and the
    straight lines PQ and RS are perpendicular
    to each other, find the area of the shaded region.
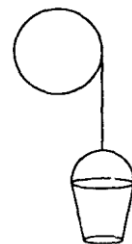   (Ans: 77 cm²)
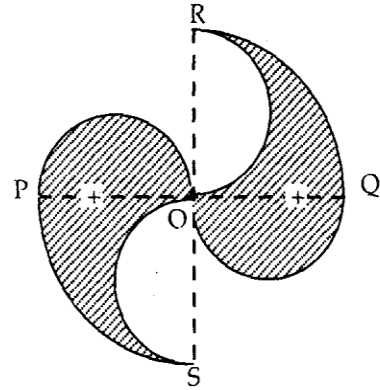
2. Find the perimeter and area of the
    adjoining figure. (Use π = 3.14)
    (Ans: 49.7 cm, 115.25 cm²)

3. In the adjoining figure, ABC is a
    right triangle, $\angle$ A = 90⁰, AB = 21 cm
    and AC = 28 cm. Semicircles are described on
    AB, BC and AC as diameters. Find the area of
    the shaded region.(Ans: 294 cm²)
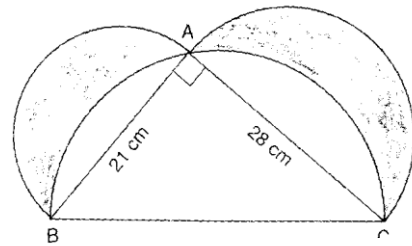
4. A bucket is raised from a well by means of a rope which is
    wound round a wheel of diameter 77 cm. Given that the bucket
    ascends in 1 minute 28 seconds with a uniform speed of 1.1 m/s.
    Calculate the number of complete revolutions the wheel makes in
    raising the bucket. (Ans: 40)
5. The minute hand of a clock is 21 cm long. Find the area described
    by the minute hand on the face of the clock between 7:00 am and
    7: 35 am.(Ans: 808.5 cm²)
6. A chord of a circle of radius 21 cm subtends an angle of 60⁰ at the centre. Find the
    area of minor and major segments. (Use $\sqrt{3}$ = 1.732)(Ans: 40.05 cm², 1345.95 cm²)
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