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AUTUMN BREAK HOLIDAY HOME WORK 2024-2025

CLASS: X **SUBJECT: MATHEMATICS**

CHAPTHER: SOME APPLICATIONS OF TRIGONOMETRY

1) **The angle of depression of a car, standing on the ground, from the top of a 75 m high tower is 30^0. The distance of the car from the base of the tower (in m) is:**
   a) **25**
   b) **50**
   c) **75**
   d) **150**
2) **If two towers of heights h_1 and h_2 subtend angles of 60^0 and 30^0 respectively at the midpoint of the line joining their feet, then h_1:h_2 will be**
   a) **1:2**
   b) **1:3**
   c) **2:1**
   d) **3:1**
3) **The ratio of the height of a tower and its shadow on the ground is the angle of elevation of the sun will be:**
   a) **30^0**
   b) **45^0**
   c) **180^0**
   d) **60^0**
4) **An observer, 1.5 m tall is 28.5 m away from a 30 m high building. the angle of elevation of the top of the building from the eye of the observer will be:**
   a) **30^0**
   b) **60^0**
   c) **75^0**
   d) **45^0**
5) **The angles of elevation of two cars, from the car to the top of a tower are 45^0 and 30^0. If the cars are on the same side of the tower and are 50 m apart, the height of the tower will be:**
   a) **25(**
   b) **25(**
   c) **50(**
   d) **50(**
6) **As observed from the top of a light-house, 100 m high above sea level, the angle of depression of a ship, sailing directly towards it, changes from 30^0 to 60^0. Determine the distance travelled by the ship during the period of observation. (use**
7) **Two ships are there in the sea on the either side of a light-house in such a way that the ships and the light house are in the straight line. The angles of depression of two ships as observed**

from the top of the light-house are 60^0 and 45^0. If the height of the light-house is 200m, find the distance between the two ships.

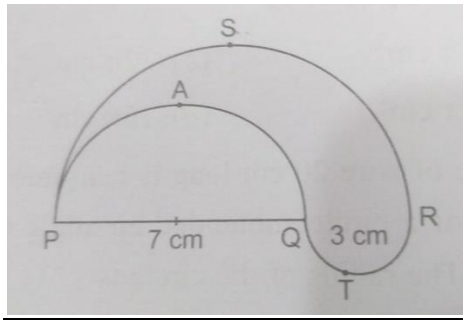
8) **The angle of elevation of the top of a tower at a distance of 120 m from a point A on the ground is 45^0. If the angle of elevation of the flagstaff fixed at the top of the tower, from A is 60^0, then find the height of the flagstaff. (use**
9) **The angle of elevation of the top of a hill at the foot of a tower is 60^0 and the angle of depression from the top of the tower to the foot of the hill is 30^0. If tower is 50 m high, find the height of the hill.**
10) **The length of a string between a kite and a point on the roof of a building 10 m high is 180 m. if the string makes an angle with the level ground such that tan= , how high is the kite from the ground?**

CHAPTER: AREAS RELATED TO CIRCLES

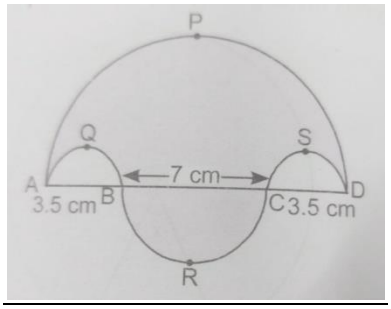
1) **The perimeter (in cm) of a square circumscribing a circle of radius** a cm**,is**
   a) **8a**
   b) **4a**
   c) **2a**
   d) **16a**
2) **The diameter of a wheel is 1.26 m. the distance travelled in 500 revolutions is**
   a) **2670m**
   b) **2880m**
   c) **1980m**
   d) **1596m**
3) **The area of a quadrant of a circle whose circumference is 44cm is**
   a) **sq cm**
   b) **70 sq cm**
   c) **sq cm**
   d)
4) **An arc of a circle is of length 5 cm, and the sector it bounds has an area of 20 cm^2. The radius of the circle is**
   a) **4cm**
   b) **10cm**
   c) **8cm**
   d) **15cm**
5) **If the circumferences of two circles are in the ratio 4:9, then the ratio in their areas is**
   a) **9:4**
   b) **4:9**
   c) **2:3**
   d) **16:81**
6) **The ratio of the outer and inner perimeters of a circular path is 23:22. If the path is 5 m wide, then fid the diameter of the inner circle.**

7) **Area enclosed between the two concentric circles is 770 cm^2. If the radius of the outer circle is 21 cm. then find the radius of the inner circle.**

8) **In adjoing figure, PSR, RTQ and PAQ are three semicircles of diameters 10cm, 3cm and 7cm respectively. Find the perimeter of the shaded region PATRSP.(USE**



9) **Find the area of the shaded region AQBRCSDPA in the figure, where arc APD,arc AQB, arc BRC and arc CSD are semicircles of diameter 14 cm,3.5 cm,7 cm and 3.5 cm respectively.(use).**



10) **The diameter of the front and rear wheels of a tractor are 80 m and 2 m find the number of revolutions that rear wheel will make to cover the distance which the front wheel covers in 1400 revolutions. .(use).**

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