1 Convert to radians, in terms of π :

- 90°
- 60°
- 30°
- 18°
- 9°

- 135°
- 225°
- 270°
- 360°
- 720°

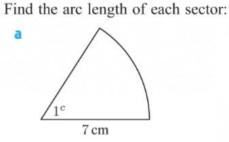
 315°

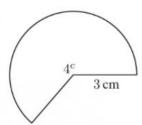
- 540°
- 36°
- 80°
- 230°

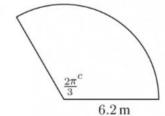
3 Convert to degrees:

- $\frac{7\pi}{6}$

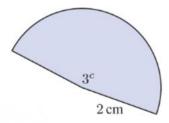
 $\frac{7\pi}{9}$

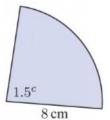


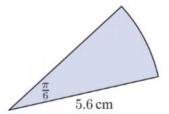




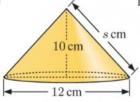
Find the area of each sector:



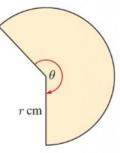




The cone

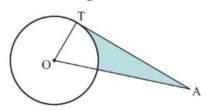


is made from this sector:



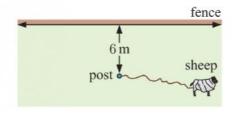
- Find, correct to 3 significant figures:
 - a the slant length s cm
 - the arc length of the sector
- **b** the value of r
- d the sector angle θ in radians.

10



[AT] is a tangent to the given circle. OA = 13 cm and the circle has radius 5 cm. Find the perimeter of the shaded region.

12

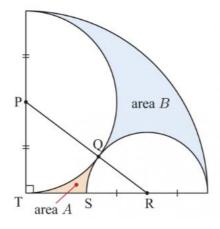


A sheep is tethered to a post which is 6 m from a long fence. The length of the rope is 9 m. Find the area which the sheep can feed on.

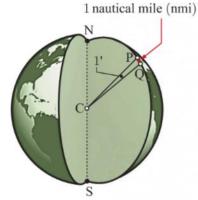
- 14 Two semi-circles touch each other within a quarter circle as shown. P, Q, and R are collinear. The radius of the quarter circle is 12 cm.
 - a Find the radius of the smaller semi-circle.
 - **b** Calculate the area of:

i A

B.



- 11 A nautical mile (nmi) is the distance on the Earth's surface that subtends an angle of 1 minute (or $\frac{1}{60}$ th of a degree) of the Great Circle arc measured from the centre of the Earth. A knot is a speed of 1 nautical mile per hour.
 - a Given that the radius of the Earth is 6370 km, show that 1 nmi is approximately 1.853 km.
 - Calculate how long it would take a plane to fly 2130 km from Perth to Adelaide if the plane can fly at 480 knots.



13 A belt fits tightly around two pulleys with radii 4 cm and 6 cm respectively. The distance between their centres is 20 cm.

Find, correct to 4 significant figures:

a 0

b θ

c 0

d the length of the belt.

