

(C2-6.2a) Name:

Homework Questions 2 – Calculating Arc Lengths

1. Calculate the length of the arcs for the sectors given. Give your answers to 1dp

a) $r = 6\text{cm}$, $\theta = \frac{5\pi}{3}$

31.4cm

b) $r = 13\text{cm}$, $\theta = \frac{2\pi}{3}$

27.2cm

c) $r = 7\text{cm}$, $\theta = 3.8 \text{ rads}$

26.6cm

2. Calculate the length of the radius for each of these sectors if:- (give answers to 2dp)

a) $l = 14\text{mm}$ $\theta = \frac{5\pi}{7}$

6.24mm

b) $l = 3.8\text{cm}$ $\theta = \frac{4\pi}{3}$

0.91cm

c) $l = 7.6\text{cm}$ $\theta = 5.2 \text{ rads}$

1.46cm

3. Calculate the angle at the centre of the sector if:- (give your answer in degrees to 1dp)

a) $l = 8\text{cm}$, $r = 5\text{cm}$

91.7°

b) $l = 3.2\text{m}$, $r = 1.8\text{m}$

101.9°

c) $l = 5.1\text{cm}$, $r = 11\text{cm}$

26.6°

4. Calculate the radius for each of the following sectors if:- (give answers to 2dp)

a) $l = 10\text{cm}$, $\theta = 64^\circ$

8.95cm

b) $l = 25\text{cm}$, $\theta = 312^\circ$

4.59cm

c) $l = 13\text{m}$, $\theta = 240^\circ$

3.10cm