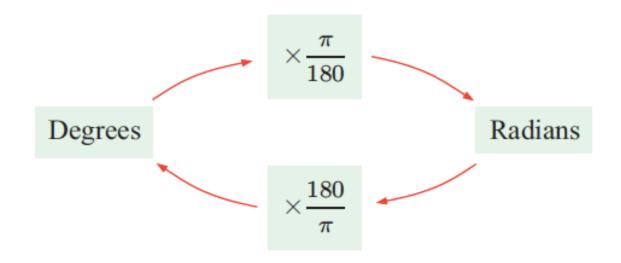


Sector and Triangle



Special angles

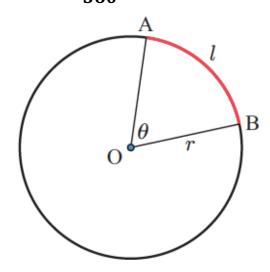
Degrees	Radians
Degrees 30°	
	π
	$\overline{4}$
60° 90°	
90°	
	π
	3π
	2
	2π



Arc Length

 $I = r\theta$, where θ is the angle of sector in radians

 $I = 2\pi r \times \frac{\theta}{360}$, where θ is the angle of sector in **degrees**

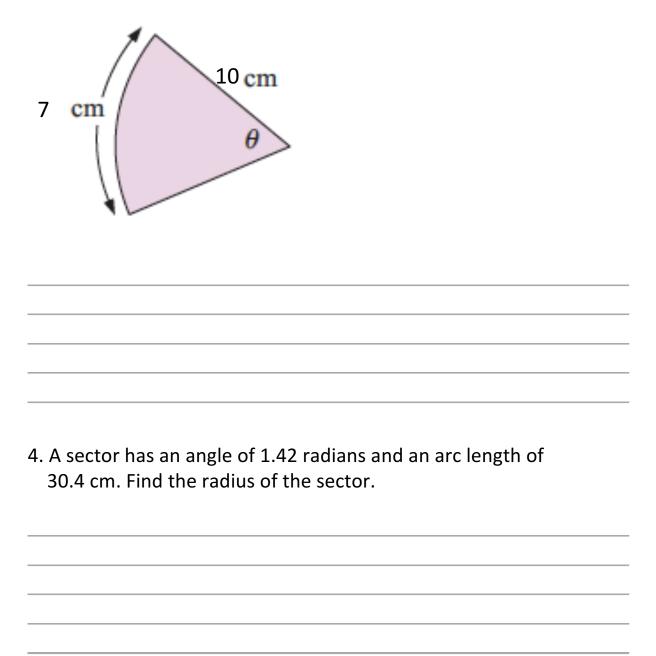


1. Find the arc length for the sector of a circle of radius 5 cm and angle 2.00 radians.

2. Find the arc length for the sector of a circle of radius 10 cm and angle 120° .



3. Find θ (in radians) of the following sector.

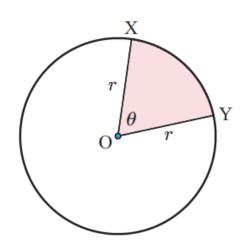




Sector area

Area = $\frac{1}{2}r^2\theta$, where θ is the angle of sector in radians

Area = $\pi r^2 \times \frac{\theta}{360}$, where θ is the angle of sector in degrees



1. Find the sector area for the sector of a circle of radius 6 cm and angle 1.55 radians.

2. Find the sector area for the sector of a circle of radius 10 cm and

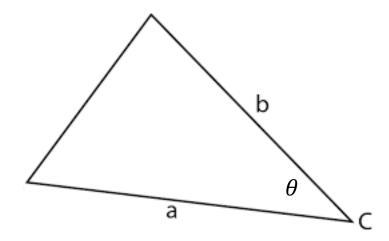


Non-right angled triangle area

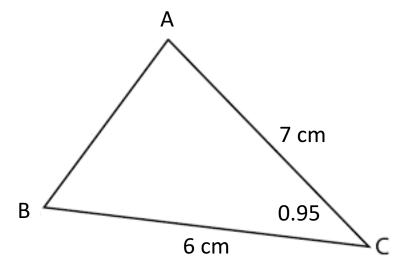
Area = $\frac{1}{2}$ ab sin θ

 $\boldsymbol{\theta}$ is included angle, between side a and b.

 $\boldsymbol{\theta}$ can be in degrees or radians.



1. Find the area of triangle ABC.



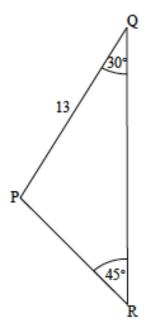
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Exercise

Paper 1

1. The following diagram shows triangle POR.



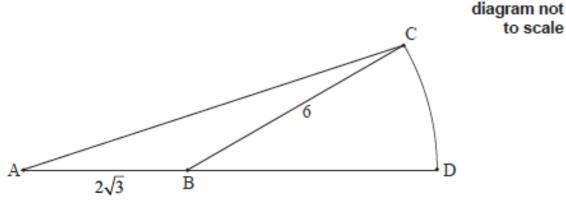
 $P\hat{Q}R = 30^{\circ}$, $Q\hat{R}P = 45^{\circ}$ and PQ = 13 cm.

Find PR.	



to scale

2. The following diagram shows a triangle ABC and a sector BDC of a circle with centre B and radius 6 cm. The points A, B and D are on the same line.



 $AB = 2\sqrt{3} \text{ cm}$, BC = 6 cm, area of triangle $ABC = 3\sqrt{3} \text{ cm}^2$, $A\hat{B}C$ is obtuse.

(a) Find angle ABC.

(b) Find the exact area of the sector BDC.