GCSE – Mathematics Only **Topic:** Area of a triangle (not right angled)	**Tier: Higher**	**Grade: A* / A**

Starter

A right angle triangle has an area of 24cm^2, It's height is 6cm and the length of the hypotenuse is 10cm.
What is its perimeter?

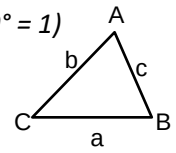
Top Tips!

Area of a Triangle

For a Non right angle triangle use

Area = ½ ab sinC

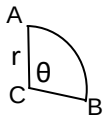
(notice for a right angle triangle C = 90° and Sin 90° = 1)



Sectors and Arcs

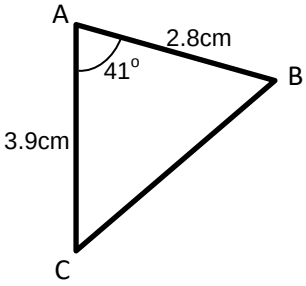
Length of arc $2\pi r \times \frac{\theta}{360}$

Area of sector $\pi r^2 \times \frac{\theta}{360}$

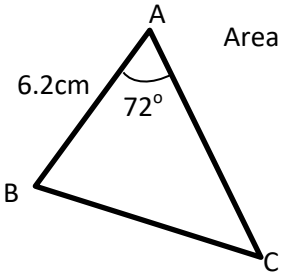


Skills:

Calculate the area of the triangle.

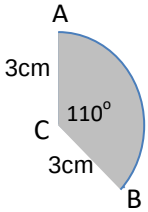


Find the length of *AC*.



Area = 42.6cm^2

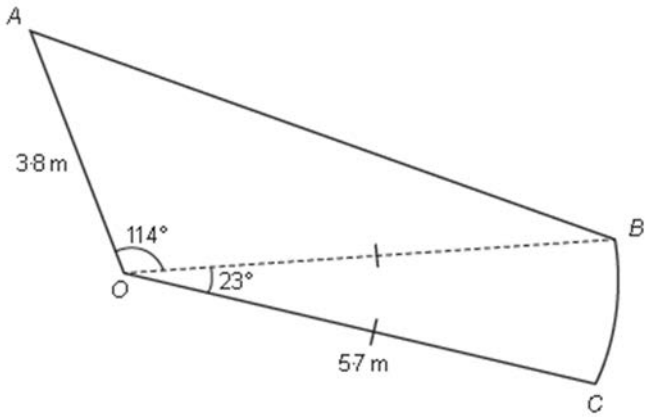
Find the length of the arc AB and the area of the Sector ABC



Examination Question:

2016 November (old) Linear P2 Higher Q14

The diagram below shows the floor plan of an entrance hall of a cinema. *BC* is an arc of a circle with radius 5·7 m.



A protective coating is applied to the floor.
This coating costs £26.75 per m^2.
How much will the coating cost if applied to the floor of the entrance hall? Give your answer correct to the nearest pound. [6]

Assessment for Learning	Video / QR code

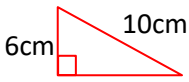
GCSE – Mathematics Only
Topic: Area of a triangle (not right angled)

Tier: Higher

Grade: A* / A

Starter

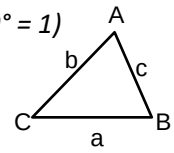
A right angle triangle has an area of 24cm^2, It's height is 6cm and the length of the hypotenuse is 10cm.
What is its perimeter?



24 = ½ x base x 6
Base = 8cm
Perimeter = 24cm

Top Tips!

Area of a Triangle
For a Non right angle triangle use
Area = ½ ab sinC
(notice for a right angle triangle C = 90° and Sin 90° = 1)



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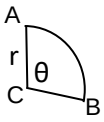
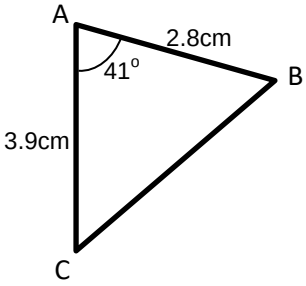
Area of sector $\pi r^2 \times \frac{\theta}{360}$



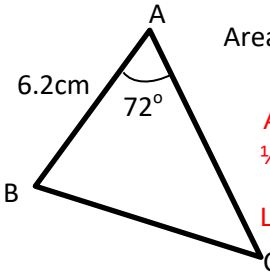
Skills:

Calculate the area of the triangle.



Area = ½ ab SinC
= ½ x 3.9 x 2.8 x Sin 41
= 3.6cm^2

Find the length of *AC*.

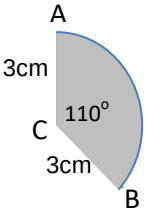


Area = 42.6cm^2

Area =
½ x 6.2 x b x Sin71

Length AC = 14.4cm

Find the length of the arc AB and the area of the Sector ABC



Length of arc = π x 6 x $\frac{110}{360}$
= 5.8cm

Area of sector = π x 3^2 x $\frac{110}{360}$
= 8.6cm^2

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2016 November (old) Linear P2 Higher Q14
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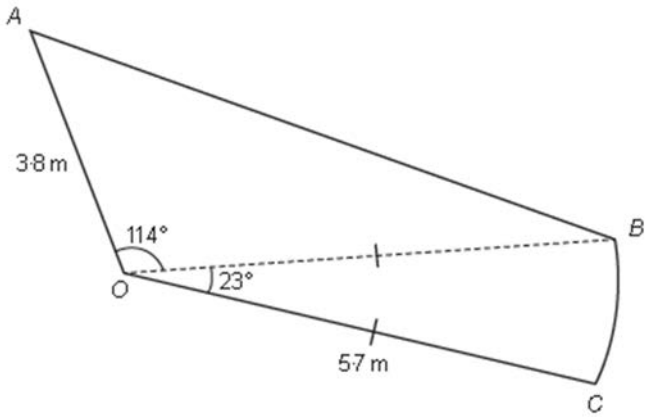

A protective coating is applied to the floor.
This coating costs £26.75 per m^2.
How much will the coating cost if applied to the floor of the entrance hall? Give your answer correct to the nearest pound. [6]

Area of triangle AOB ½ x 3.8 x 5.7 x Sin 114
=9.89m^2

Area of Sector BOC π x 5.7^2 x $\frac{23}{360}$
= 6.52m^2

Total Area of floor =16.41m^2

Cost of coating £26.75 x 16.41 = £438.97 **£439** (nearest pound)

Assessment for Learning

Video / QR code


GwE


GwE