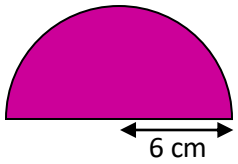
Timester Challenge

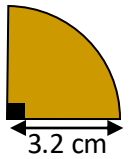
Area of a Sector

Work out the area of the semicircle with a radius of 6cm. Give your answer in terms of π.



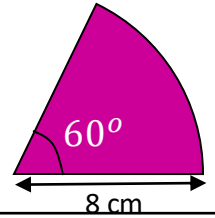
Bronze

The diagram shows a quarter of a circle. Work out the area of the quarter-circle.



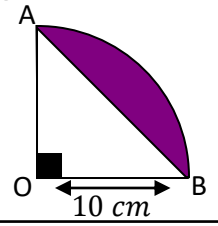
Bronze

The diagram shows a sector of a circle of radius 8cm. Calculate the area of the sector.



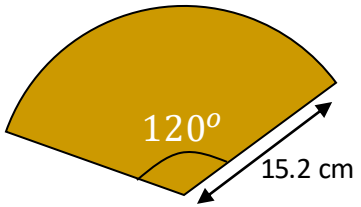
Bronze

The diagram shows a quarter-circle with centre O and radius $10\ cm$. AB is a chord of the circle. Work out the area of the shaded segment. Give your answer correct to 3 significant figures.



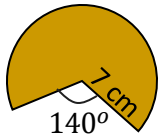
Silver

The diagram shows a sector of a circle of radius 15.2 cm. Calculate the area of the sector.



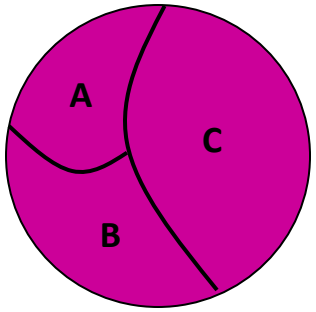
Silver

The diagram shows a sector of a circle of radius $7\ cm$. Calculate the area of the shaded region of the circle.



Gold

The diagram shows a circle split into three regions: A, B and C. The ratio of the areas of the regions A, B and C is 1:2:3. The radius of the circle is 3 cm.
Calculate the area of region B.



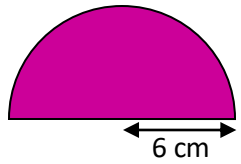
Gold

Timester Challenge

Area of a Sector

Answers

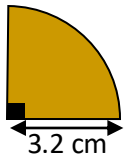
Work out the area of the semicircle with a radius of 6cm. Give your answer in terms of π.



$\frac{1}{2} \times \pi \times 6^2$
$= 18\pi$
$= 56.55cm^2$

Bronze

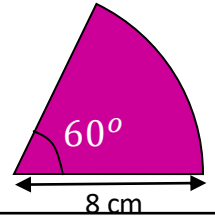
The diagram shows a quarter of a circle. Work out the area of the quarter-circle.



$\frac{1}{4} \times \pi \times 3.2^2$
$= \frac{64}{25}\pi$
$= 8.04cm^2$

Bronze

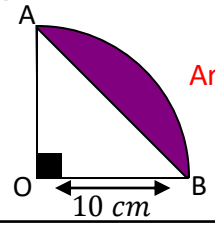
The diagram shows a sector of a circle of radius 8cm. Calculate the area of the sector.



$\frac{60}{360} \times \pi \times 8^2$
$= \frac{32}{3}\pi$
$= 33.51cm^2$

Bronze

The diagram shows a quarter-circle with centre O and radius 10 cm. AB is a chord of the circle. Work out the area of the shaded segment. Give your answer correct to 3 significant figures.

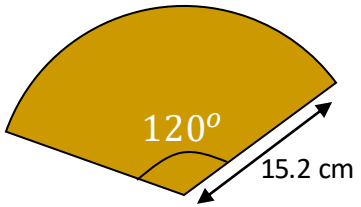


Area of Sector $= \frac{1}{4} \times \pi \times 10^2$
$= 25\pi = 78.53981\ldots cm^2$
Area of triangle $= \frac{1}{2} \times 10 \times 10$
$= 50cm^2$
Area of shaded
$= 25\pi - 50 = 28.54cm^2$

Silver

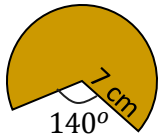
The diagram shows a sector of a circle of radius 15.2 cm. Calculate the area of the sector.

$\frac{120}{360} \times \pi \times 15.2^2$
$= 241.94cm^2$



Silver

The diagram shows a sector of a circle of radius 7 cm. Calculate the area of the shaded region of the circle.



$360 - 140 = 220^o$

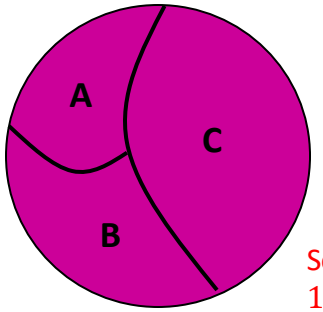
$\frac{220}{360} \times \pi \times 7^2$
$= 94.07cm^2$

Gold

The diagram shows a circle split into three regions: A, B and C. The ratio of the areas of the regions A, B and C is 1:2:3. The radius of the circle is 3 cm. Calculate the area of region B.

Area of circle $= \pi \times 3^2 = 9\pi$

$\frac{9\pi}{6} = 1.5\pi$



A: 1.5π
B: 1.5π 1.5π
C: 1.5π 1.5π 1.5π

Section B
$1.5\pi \times 2 = 3\pi\ cm^2$ Gold