Learning Objective: To apply knowledge to find the area of semi-circles, quadrants and sectors

Finding the area of sectors given the angle

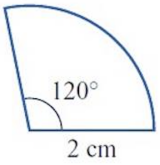
A sector is formed by dividing a circle with two radii.

The area of a sector is determined by calculating the fraction of the area using the given angle.

$$A\ (sector) = \frac{\theta}{360} \times \pi r^2$$

Example:

Find the area of the sector to 2 decimal places.



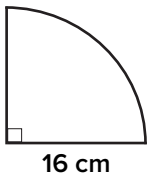
Solution:

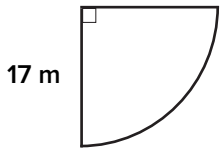
$$A\ (sector) = \frac{\theta}{360} \times \pi r^2$$

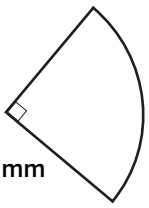
$$A\ (sector) = \frac{120}{360} \times \pi \times r^2$$

$$A\ (sector) = 4.19\ cm^2 \text{ (to 2 dp)}$$

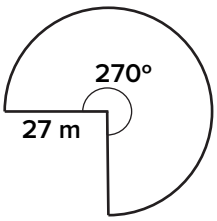
Find the area of the semi-circles and quadrants. Round to 2 decimal places.

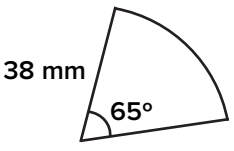


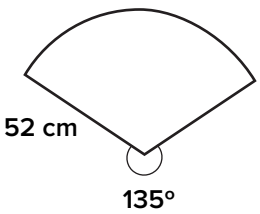




Find the area of the sectors. Round to 2 decimal places.







MATHEMATICS: ANSWER SHEET

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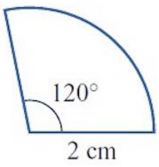
Example:

Find the area of the sector to 2 decimal places.



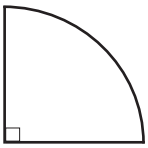
Solution:

$$A\ (sector) = \frac{\theta}{360} \times \pi r^2$$

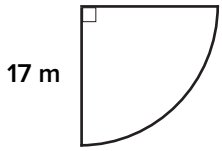
$$A\ (sector) = \frac{120}{360} \times \pi \times r^2$$

$$A\ (sector) = 4.19\ cm^2 \text{ (to 2 dp)}$$

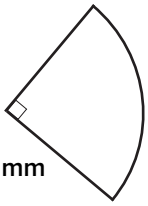
Find the area of the semi-circles and quadrants. Round to 2 decimal places.



A (quadrant) = 1 / 4 x π r²
A (quadrant) = 1 / 4 x π x 16²
A (quadrant) = 201.06 cm²

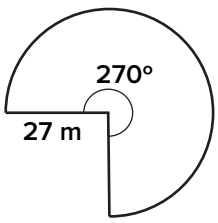


A (quadrant) = 1 / 4 x π r²
A (quadrant) = 1 / 4 x π x 17²
A (quadrant) = 226.98 m²

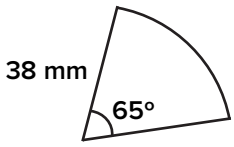


A (quadrant) = 1 / 4 x π r²
A (quadrant) = 1 / 4 x π x 3.7²
A (quadrant) = 10.75 mm²

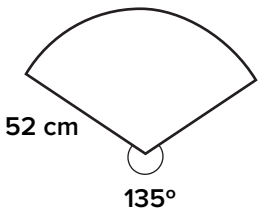
Find the area of the sectors. Round to 2 decimal places.



A (sector) = θ / 360 x π r²
A (sector) = 270 / 360 x π x 27²
A (sector) = 1717.67 m²



A (sector) = θ / 360 x π r²
A (sector) = 65 / 360 x π x 38²
A (sector) = 819.08 mm²



A (sector) = θ / 360 x π r²
A (sector) = 135 / 360 x π x 52²
A (sector) = 3185.57 cm²