Area of Disc and Sectors

Lesson 34

1. A circular medium pizza includes 6 equal slices. What is the area of each slice of pizza, if the diameter is 15cm?

$r = 7.5$

$\text{Area} = \pi r^2$

$= \pi(7.5)^2$

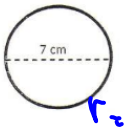
$= 176.71 cm^2$

1 slice pizza $\div 6$

$\frac{176.71}{6} = 29.45 cm^2$

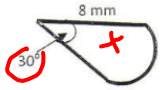
2. Find the measurement of the following

a) Area: $\pi r^2 = \pi(3.5)^2$ $= 38.48 cm^2$




$r = 3.5$

b) Sector Area: $x = 16.75 mm^2$




$\frac{30^\circ}{360^\circ} = \frac{x\ mm^2}{201 mm^2}$

$A = \pi r^2$ $\pi(8)^2$ $= 201$

c) Diameter: _____


$A = \pi r^2$

$\sqrt{\frac{A}{\pi}} = r$ $\sqrt{\frac{39.27}{\pi}} = r = 3.5 cm$ $d = 7 cm$

3. A circle with a radius of 6m is inscribed in a square. Find the area of the shaded region.


Area □ − area ○

12 x 12 $\pi r^2$

$144 - (\pi \times (6)^2)$ $= 144 - 113.09$

$= 30.9 m^2$ $= 124$

4. Calculate the radius of a disc, given its sector area is $6cm^2$ with a central angle of 30°.

$\frac{30^\circ}{360^\circ} = \frac{6 cm^2}{x\ cm^2}$ $\frac{360 \times 6}{30} = 72 cm^2 = \text{area}$

$\sqrt{\frac{a}{\pi}} = r$ $\sqrt{\frac{72}{\pi}} = 4.79 cm$

5. Calculate the central angle of a sector, given its sector area is $31m^2$ and its radius is 42m.

$\frac{x^\circ}{360^\circ} = \frac{31 m^2}{5541.77}$

① $A = \pi(42)^2$ $= 5541.77 m^2$

$x = \frac{360 \times 31}{5541.77} = 2.01^\circ$

6. Calculate the circumference of the circle whose sector area is $352.216cm^2$ and sector angle is 30°.

$\frac{30^\circ}{360^\circ} = \frac{352.216 cm^2}{x = \text{area} cm^2}$

$x = \frac{360 \times 352.216}{30}$

$x = 4226.59 cm^2$ area

$\text{area} = \pi r^2$

$\sqrt{\frac{a}{\pi}} = r$

$36.68 cm = r$

$C = 2\pi r$

$= 2\pi(36.68)$

$= 230.46 cm$