Area and Circumference of Circles

Area of a Circle	**Circumference of a Circle**
$A = \pi r^2$	$C = 2\pi r$
r = the length of the radius	r = the length of the radius

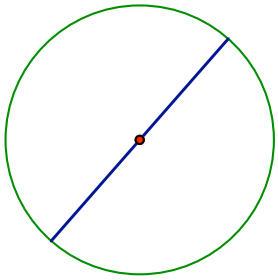
Example: Find the area and circumference of the circle with diameter 12 ft.
Solution: The radius of the circle is 6 ft. Plus them into the formula for both the area and circumference

Area

$A = \pi r^2$
$= \pi r^2$
$= \pi 6^2$
$= 36\pi \text{ ft}^2$
$\approx 113.097 \text{ ft}^2$

Circumference

$C = 2\pi r$
$= 2\pi(6)$
$= 12\pi \text{ ft}$
$\approx 37.699 \text{ ft}$

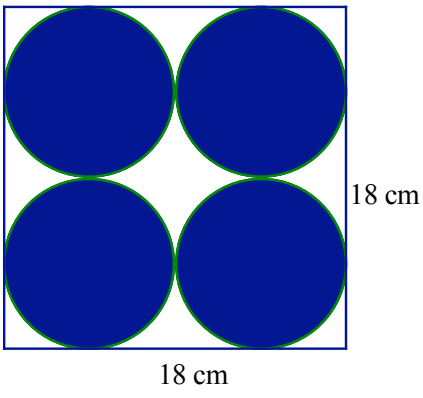


Example: The area of a circle is 56 m^2. Find the radius of the circle

$A = \pi r^2$
$56 = \pi r^2$
$17.825 \approx r^2$
$r \approx \sqrt{17.825}$
$r \approx 4.222 \text{ m}$

Example: Find the area of the non-shaded region

Solution: The plan is to find the area of the 4 circles and subtract it from the area of the square.



<u>Area of the 4 circles</u>

$A = \pi r^2$
$= \pi(4.5)^2$
$= 20.25\pi \text{ cm}^2$
$\approx 63.617 \text{ cm}^2$

<u>Area of the square</u>

$A = s^2$
$= (18)^2 \text{ cm}^2$
$= 324 \text{ cm}^2$

<u>Area of the non-shaded</u>
Area of the on-shaded = (Area of the square) – (Area of the 4 circles)
$=324 - 4(63.617)$
$=69.532 \text{ cm}^2$