

Circle Circumference:

<http://lima.osu.edu/assets/lima/uploads/Departments/Math/GeoGebra/circumference.html>

1. Approximately how many diameters fit along the circumference of the circle? A little more than 3
2. Approximately how many radii would this be? A little more than 6
3. Record the three circumferences and diameters shown in class in the spaces below.

Circumference #1:

Circumference #2:

Circumference #3:

Diameter #1:

Diameter #2:

Diameter #3:

4. Divide each pair. #1:

#2:

#3:

5. What do you notice about the results in #4? They are all very close → π (pi)

Circle Circumference: Distance AROUND a circle (like perimeter)

$2\pi r$ or πd

* If exact answer is desired, don't multiply by π

Examples: Determine the circumference and/or find the missing information requested. (E) means exact value.

a) $r = 3$ cm

b) $d = 8.5$ cm

c) $r = 5\sqrt{3}$

$2\pi(3)$

$\pi(8.5)$

$2\pi(5\sqrt{3})$

$30 = 2\pi r$

$2\pi \quad 2\pi$

$C = \underline{6\pi \text{ cm}}$ (E)

$C = \underline{8.5\pi \text{ cm}}$ (E)

$C = \underline{10\pi\sqrt{3} \text{ cm}}$ (E)

d) $C = 36\pi$ cm

e) $C = 30$ in

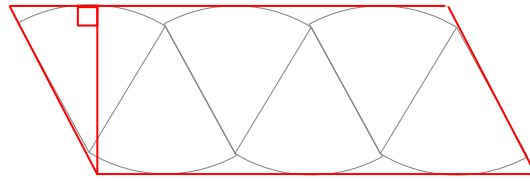
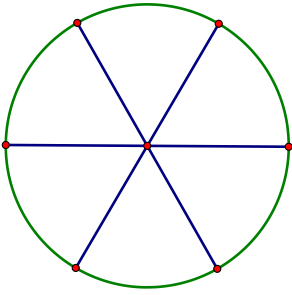
$\frac{36\pi}{2\pi} = \frac{2\pi r}{2\pi}$

$\frac{30}{2\pi} = \frac{2\pi r}{2\pi}$

$r = \underline{18 \text{ cm}}$ (E)

$r = \underline{\frac{15}{\pi} \text{ in}}$ (E)

Circle Area:



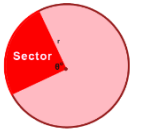
What shapes do these figures seem to resemble? parallelogram

What is the relationship between the area of the circles and the figures made of sectors?
The same

What value would approximate the 'base' of this sector figure?
Half the circumference = πr

What value would approximate the 'height' of this sector figure?
The circle's radius

A figure formed when 2 radii intersect a

<p>Circle Area:</p> <p>$\pi r(r)$ or πr^2</p>	<p>Sector Area: circle.</p> <p>Area = $\frac{\text{central } \angle \text{ measure}}{360} * \pi r^2$</p> <p>= (% of circle)(area of circle)</p> 
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Examples: Determine the area of the circle, sector, or figure using the information given.

a) $r = 3 \text{ cm}$ Area = $9 \pi \text{ cm}^2$ (E)

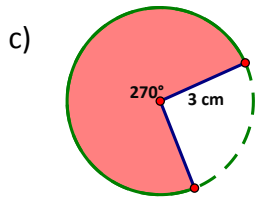
b) $d = \frac{5}{4} \text{ cm}$ Area = $\frac{25}{64} \pi \text{ cm}^2$ (E)

$A = \pi(3)^2$

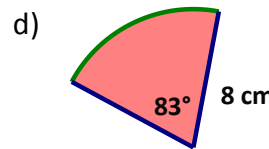
$r = \frac{\frac{5}{4}}{2} = \frac{5}{4} * \frac{1}{2} = \frac{5}{8}$

$A = \pi\left(\frac{5}{8}\right)^2 = \pi\left(\frac{25}{64}\right)$

Area = $\frac{\text{central } \angle \text{ measure}}{360} * \pi r^2$



Area = $\frac{270}{360} * \pi(3)^2$

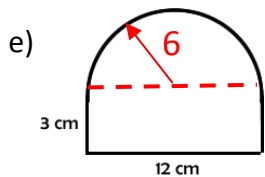


Area = $\frac{83}{360} * \pi(8)^2$

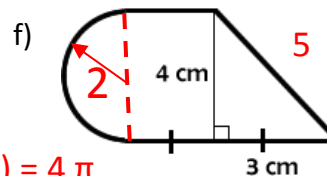
Area = $\frac{3}{4} * \pi(9)$

$\approx 46.36 \text{ cm}^2$

Area = $\frac{27\pi}{4} \text{ cm}^2 \approx 21.21 \text{ cm}^2$



$C = 2 \pi (6) = 12 \pi$



$C = 2 \pi (2) = 4 \pi$

Perimeter = $18 + 6 \pi \text{ cm}$

Perimeter = $14 + 2 \pi \text{ cm}$ (E)

Area = $36 + 18 \pi \text{ cm}^2$ (E)

Area = $18 + 2 \pi \text{ cm}^2$ (E)

$A = (3)(12) + \frac{1}{2} \pi (6)^2$

$P = 3 + 3 + \frac{1}{2} 4 \pi + 3 + 5$

$P = 3 + 12 + 3 + \frac{1}{2} (12) \pi$

$A = (3)(4) + \frac{1}{2} \pi (2)^2 + \frac{1}{2} (3) (4)$