**Intro to Geometry** (G.GMD.1)
**Unit Three: Circles** (IC3)

Name: _____Key_____
Date: _____ Period: _____

**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 $\pi d$

* 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

$2\pi(3)$

C = $6\pi$ cm (E)

b) d = 8.5 cm

$\pi(8.5)$

C = $8.5\pi$ cm (E)

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

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

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

d) C = $36\pi$ cm

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

r = 18 cm (E)

e) C = 30 in

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

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

**Circle Area:**

| **Circle Area:** | **Sector Area:** A figure formed when 2 radii intersect a circle. |
|---|---|
| $\pi r(r)$ or $\pi r^2$ | Area = $\frac{central\angle measure}{360} * \pi r^2$ = (% of circle)(area of circle)   |

Examples: Determine the area of the circle, sector, or figure using the information given.

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

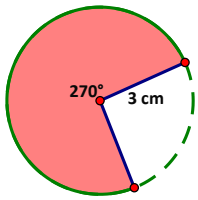
$A = \pi(3)^2$

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

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

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

c)




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

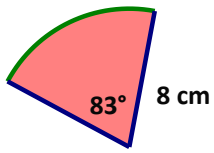
$Area = \frac{270}{360} * \pi(3)^2$

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

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

Area $\approx 21.21$ cm$^2$ (2 dec)

d)




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

$\approx 46.36$ cm$^2$

Area $\approx 46.36$ cm$^2$ (2 dec)