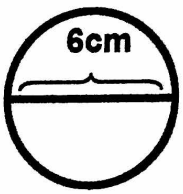
U12 Problem Set #4 – Area of a Circle

1.) Find the **area** of the circle shown below. Round your answer to the nearest *tenths* place. ***Show your work.***



$A = \pi r^2$

$A = \pi (3)^2$

$A = 28.274333388 \rightarrow \boxed{28.3\ cm^2}$

$d = 6$

$r = 3$

2.) A round table has a diameter of 35 inches. Find the area of the table. Leave your answer in terms of π. ***Show your work.***

$d = 35$

$r = 17.5$

$A = \pi r^2$

$A = \pi (17.5)^2$

$\boxed{A = 306.25\pi\ in^2}$

3.) A pizzeria has free delivery within a 7 kilometer radius of the restaurant. What was the size of the free delivery area? Round to the nearest *hundredth*. ***Show your work.***

$r = 7$

$A = \pi r^2$

$A = \pi (7)^2$

$A = 153.93804$

$\boxed{A = 153.94\ km^2}$

4.) A small pizza has a diameter of 10 inches, and a medium has a diameter of 12 inches. How much more pizza do you get with the medium pizza? Use 3.14 for π. ***Show your work.***
Hint: Find the area of each pizza.

Small

$d = 10$

$r = 5$

$A = \pi r^2$

$A = 3.14(5)^2$

$A = 78.5 in^2$

Med

$d = 12$

$r = 6$

$A = \pi r^2$

$A = 3.14(6)^2$

$A = 113.04 in^2$

$113.04 - 78.5$

$\boxed{34.54\ in^2}$

TURN OVER→

Review It!

5.) The radius of a circle is 7 inches.

a.) What is the **circumference** of the circle? Use 3.14 for π. ***Show your work.***

$r = 7$

$C = 2\pi r$

$C = 2(3.14)(7)$

$C = 43.96 \text{ in}$

b.) Suppose the radius of the circle is doubled to 14 inches. What is the **circumference** of this circle? Use 3.14 for π. ***Show your work.***

$r = 14$

$C = 2\pi r$

$C = 2(3.14)(14)$

$C = 87.92$

c.) Explain how doubling the radius affects the circumference.

Doubling the radius doubles the circumference → $43.96(2) = 87.92$

↑ double (x2)

6.) Simplify the following expressions. Be certain to show all algebraic work and leave your answer in standard form (highest to lowest exponent).

a.) $-8x + 9 + 4 - 2x$

$-10x + 13$

b.) $15 + 9a + a - 12$

$10a + 3$

c.) $4r - 5s + 2rs - 8s - 3r$

$1r - 13s + 2rs$

$r - 13s + 2rs$

d.) $7x + 31x^2 + 8x$

$31x^2 + 15x$