Name: _____ Date: _____

Day 4 – Circumference and Area of Circles

$C = 2\pi r$ or πd $A = \pi r^2$

1. Amber and Jeannette ordered a large pizza and ate half of it. Use the chart below to find the number of square inches the two girls ate of pizza.

Pizza Size	Diameter r	Price	Area (in^2)	Price/Area
Small	12 inches 6	$12.50	$\pi(6)^2 = 113.09 in^2$	$\frac{12.50}{113.09} = .11$ 11¢ per in^2
Medium	14 inches 7	$15.00	$\pi(7)^2 = 153.94 in^2$	$\frac{15}{153.94} = .10$ 10¢ per in^2
Large	16 inches 8	$17.50	$\pi(8)^2 = 201.06 in^2$	$\frac{17.50}{201.06} = .09$ 9¢ per in^2
X-Large	18 inches 9	$20.00	$\pi(9)^2 = 254.47 in^2$	$\frac{20}{254.47} = .08$ 8¢ per in^2

2. Which pizza is the better bargain?
X-Large, it's the cheapest per square inch.

3. Kira drew a circle with a radius of 20 inches and then another circle with a radius of 10 inches. What is the approximate difference between the areas of these two circles?

Circle 1

Circle 2

C1: $A = \pi(20)^2$, $A = 400\pi$

C2: $A = \pi(10)^2$, $A = 100\pi$

Circle 1 is about 4 times larger. The difference in the areas are 300π or about 942.48

4. Bicycles are sized by the diameter of their wheels. Maria is purchasing a 26" (diameter) bicycle. How far would she travel with 10 wheel revolutions? Report your answer in approximate inches *and* approximate feet.

$C = \pi d$
$C = 26\pi$
$C \approx 81.6814$ in

$81.6814 \cdot 10 = 816.814$ in

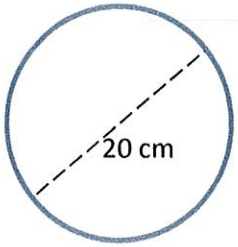
816.814 in or about 68.1 feet

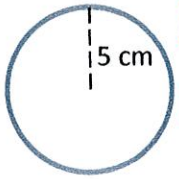
5. Using the rate from the problem above, about how many revolutions would it take her to travel 500 feet? $500 ft \cdot \frac{10 rev}{68.1 ft} = 73.4$

73.4 revolutions

6. Find the difference between the circumferences of the circles shown.

$C = \pi d$
$C = \pi(20)$
$C = 20\pi$





$C = 2\pi r$
$C = 2\pi(5)$
$C = 10\pi$

The first circles circumference is twice as large. The difference in circumferences is 30π

7. Mrs. Apple wants to put border around some circular tables in the cafeteria for Parent Night. Each of the 30 tables has a diameter of 4 feet. About how many feet of border should she order?

$C = \pi d$

$C = 4\pi$

$C \approx 12.57$

$12.57 \cdot 30 = 377.1$

She should order about 377.1 feet.

8. If each package of border contains 10 feet and costs $3.25, how much money will she need?

$377.1 / 10 = 37.71$

$37.71 \cdot 3.25 = 122.56$

She will need about $122.56

9. If the area of a circular rug is approximately 507 ft², what is the approximate diameter?

$A = \pi r^2$

$\frac{507}{\pi} = \frac{\pi r^2}{\pi}$

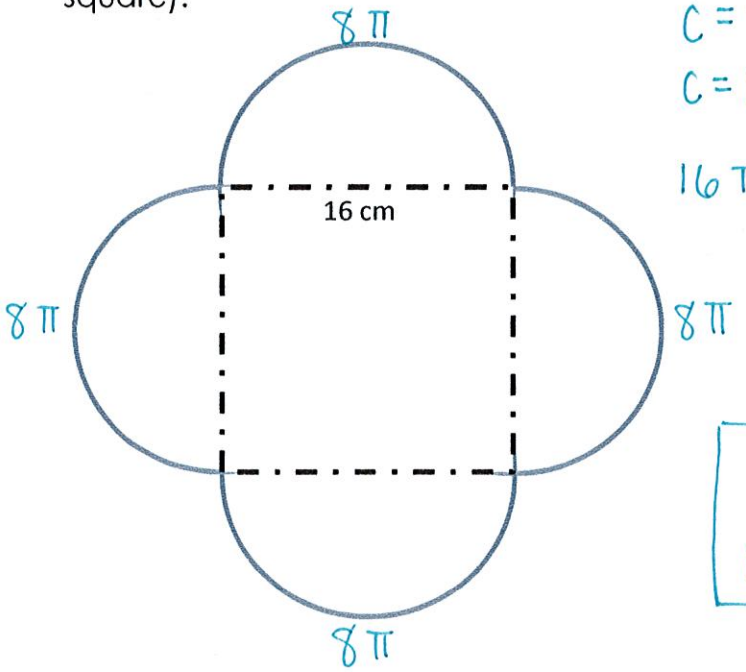
$\sqrt{161.38} = \sqrt{r^2}$

$r \approx 12.7$

$12.7 \cdot 2 = 25.4$

about 25.4 ft

10. Find the distance around the figure below using 3.14 for pi (interior section makes a square).



$C = \pi d$

$C = 16\pi$

$16\pi / 2 = 8\pi$

$8\pi \cdot 4 = 32\pi$

$32\pi \approx 100.53$

32π or 100.53