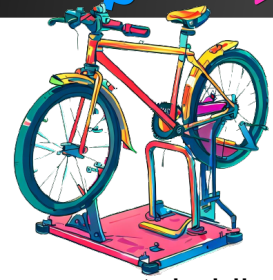


Name: \_\_\_\_\_

## Circumference of a Circle Word Problems

### ***BRIAN'S BIKE REPAIR***



1.) Brian had to put new wheels on three different bikes today: a mountain bike needed a wheel with a 24 inch diameter, a trick bike needed a wheel with a 21 inch diameter, and a beach cruiser needed a wheel with an 11 inch radius. Find each of the following:

a.) The circumference of the mountain bike wheel (to the nearest tenth).

b.) The circumference of the trick bike wheel (to the nearest tenth).

c.) The circumference of beach cruiser bike wheel (to the nearest tenth).

2.) Brian must install a special front wheel for a giant bicycle. If the wheel has a radius of 3.25 feet, what is the circumference of the wheel (to the nearest tenth of a foot)?



- 3.) Brian is building three custom tires for a tricycle. Both of the smaller rear tires have a diameter of 9.5 inches and the front tire has a diameter of 2 feet. How much larger is the circumference of the front tire than the combined circumference of the two rear tires.



- 4.) Brian sells special extra-wide bike tires that have a circumference of approximately 59.7 inches. What is the approximate length of the radius of the tire to the nearest tenth of a foot?



## ANSWER KEY

1.)

a.) **Mountain Bike Wheel:**  $C = \pi d \rightarrow C = \pi \times 24 \approx 75.4 \text{ in}$

b.) **Trick Bike Wheel:**  $C = \pi d \rightarrow C = \pi \times 21 \approx 65.97 \approx 66 \text{ in}$

c.) **Beach Cruiser Wheel:**  $C = \pi d \rightarrow C = \pi \times 22 \approx 69.1 \text{ in}$

2.)  $C = \pi d \rightarrow C = \pi \times 6.5 \approx 20.4 \text{ ft}$

3.)

**Rear Tire(s):**

$$C = \pi d \rightarrow C = \pi \times 9.5 \approx 29.845 \text{ in}$$

$$29.845 \times 2 = 59.7$$

**Front Tire:**

$$2 \text{ feet} = 24 \text{ inches}$$

$$C = \pi d \rightarrow C = \pi \times 24 \approx 75.4 \text{ in}$$

$$75.4 - 59.7 = 15.7$$

The circumference of the front tire is 15.7 inches longer than the combined circumference of the two rear tires.

4.)

$$C = \pi \times d$$

$$59.7 = \pi \times d$$

$$19.00310021 \approx d$$

$$19 \approx d$$

$$9.5 \approx r$$

The radius is approximately 9.5 feet long.