Circles and Diameters

NAME _____

1. If you know the circumference of a circle, how could you determine — without measuring — the length of the diameter? (This is just a prediction… if you don't know the answer, that's okay… just take a guess.)

2. Kimisha rides her bike along the road that runs all the way around the edge of a small island. Altogether, she bikes ten miles. She knows that there is a bike path that runs straight across the middle of the island. If, instead of circling the island, she had taken the bike path across the island, how far would she have gone?

After making your predictions above…
Use string and a ruler to measure the circles your teacher gives you. In the table below, record the lengths. Use appropriate labels (such as *cm* or *in.*).

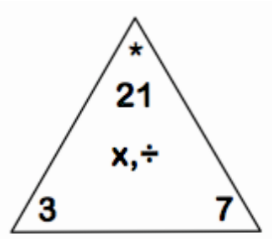
Note: Your teacher will tell you what measurements to record in the fourth column as well as how to label it. Until you receive instructions, leave this column blank.

Circle	Circumference	Diameter	
1			
2			
3			
4			
5			
6			

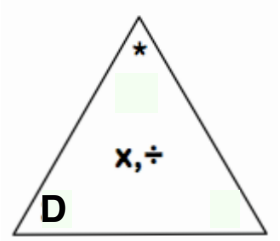
3. Now that you have completed the investigation, would you change your answer to Question 1? What changes need to be made to your method to arrive at a more precise answer? What rule can be used to find the diameter of any circle if you know its circumference?

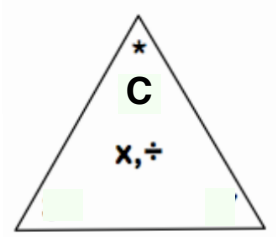
4. You may remember using Fact Family triangles, like the one shown here. For this Fact Family Triangle, we have these facts:

$3 \times 7 = 21$
$7 \times 3 = 21$
$21 \div 3 = 7$
$21 \div 7 = 3$



Finish the Circle Fact Families below, to show how the circumference is related to the diameter. Use **C** for circumference, and **D** for diameter.





6. Knowing what you now know, determine a more accurate answer for Question 2.