



Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

Pythagoras has been cycling around the lake. His bike is fairly old and one brake pad has worn away on the front wheel. A certain part of the wheel always touches the brake pad making a short grinding noise. It only does this once every revolution.

Pythagoras has been meaning to buy an odometer for his bike so he can measure the distance around the lake. However he has decided to use his brain instead. He knows that he has 48 cm diameter tires on his bike and thinks he can work out the circumference. He has placed the wheel so that it will grind immediately and is going to count the noises he hears.

**Remember: Circumference of a circle = pi ( $\pi$ ) x diameter (D).  $C = \pi \times D$   
 $\pi$  is approximately equal to 3.14**



## PREVIEW

Please [Sign In](#) or [Sign Up](#) to download the printable version of this worksheet

- If he rides for exactly four and a half kilometers? .....
- If he rides at twice the speed around the lake once? .....



### Challenge:

A tree doubled its height each year until it reached its maximum height of 9.6 meters. It took ten years to reach this height. How many years did it take for the tree to reach half its maximum height?



Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

Pythagoras has been cycling around the lake. His bike is fairly old and one brake pad has worn away on the front wheel. A certain part of the wheel always touches the brake pad making a short grinding noise. It only does this once every revolution.

Pythagoras has been meaning to buy an odometer for his bike so he can measure the distance around the lake. However he has decided to use his brain instead. He knows that he has 48 cm diameter tires on his bike and thinks he can work out the circumference. He has placed the wheel so that it will grind immediately and is going to count the noises he hears.

**Remember: Circumference of a circle = pi ( $\pi$ ) x diameter (D).  $C = \pi \times D$   
 $\pi$  is approximately equal to 3.14**



## PREVIEW

Please [Sign In](#) or [Sign Up](#) to download the printable version of this worksheet

5. If he rides for exactly four and a half kilometers? **3000 noises**.....

6. If he rides at twice the speed around the lake once? **250 times**.....

(Note: These answers are based on the circumference of the wheel being rounded to 150 cm.)



### **Challenge:** Nine years.

A tree doubled its height each year until it reached its maximum height of 9.6 meters. It took ten years to reach this height. How many years did it take for the tree to reach half its maximum height?