Evaluate: How important is a decimal place?

Name _____ Period _____ Date _____

The distance a car travels is found by multiplying the tire's circumference times the number of rotations. Remember that circumference is found by multiplying pi(π) times the diameter of the circle.

Distance= circumference X # of rotations

The speed of a car is found by dividing the distance by the time it took to travel that distance.

Speed= distance/ time (12inches = 1Foot; 5280Feet = 1mile)

1. A car has tires with a 30 inch diameter. Every minute the tires rotate 60 times. If a new car manufacturer decided to use π=3.0, how would the actual and calculated speed differ? Show all of your calculations and write an answer statement at the bottom. Be sure your units are miles per hour.

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2. Car factories calibrate their cars' speed based on the tire size. When you change the size of the tire, you cannot make adjustments to the speed calculations. You buy a car with 32 inch diameter tires, but you want to add bigger tires. You install 39 inch diameter tires. The police pull you over in a 30mph zone. Are you going too fast or too slow? By how much? Show all of your work!

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