

Lesson 6.6: Around the World

In this lesson you will:

- solve application problems involving radius, diameter, and circumference

Many application problems are related to π . Satellite orbits, the wheels of a vehicle, tree trunks, and round pizzas are just a few of the real-world examples that involve the circumference of circles. Here is a famous example from literature.

In the novel *Around the World in Eighty Days* (1873), Jules Verne recounts the adventures of brave Phileas Fogg and his servant Passerpartout. They begin their journey when Phileas bets his friends that he can make a trip around the world in 80 days. Phileas's precise behavior, such as monitoring the temperature of his shaving water or calculating the exact time and location of his points of travel, reflects Verne's interest in the technology boom of the late 19th century. His studies of geology, engineering, and astronomy aid the imaginative themes in this and his other novels, including *A Journey to the Center of the Earth* and *Twenty Thousand Leagues Under the Sea*.

•Example 1: If the diameter of the Earth is 8000 miles, find the average speed in miles per hour Phileas Fogg needs to circumnavigate Earth about the equator in 80 days.

•Example 2: The wheel on Devin's unicycle has a diameter of 27 inches.

a.) How far will the unicycle travel in 100 revolutions of the wheel? Give your answer to the nearest whole foot.

b.) Devin rides his unicycle 2 miles to school each day. About how many revolutions does the wheel make during his trip? (5280 ft = 1 mile)

•Example 3: An audio CD spins at a rate of 200 rotations per minute. If the radius of a CD is 6 cm, how far does a point on the outer edge travel during the playing of a 57-minute CD?

⇒**ASSIGNMENT:** _____