Applications of Angles

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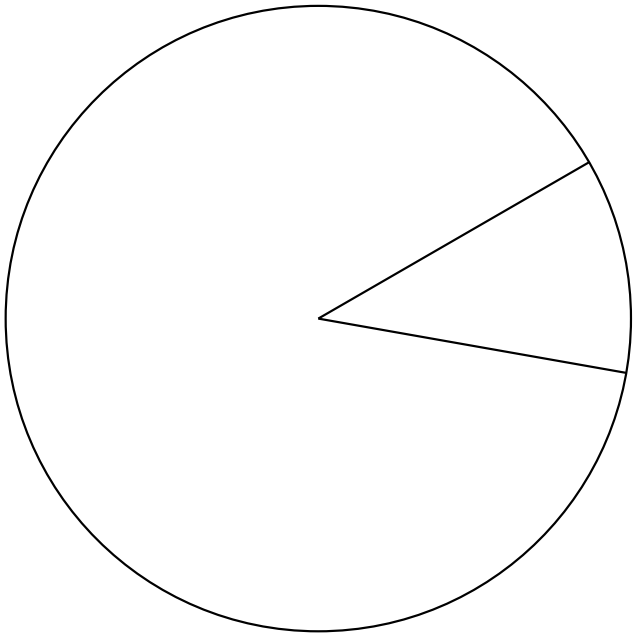
Announcements

1. Homework in MyOpenMath!
2. Office hours canceled today.
3. Don't forget about exit tickets!

Applied Example

We found the radius of the earth (at the equator) in a previous example. If this class took place on the equator, how many miles would we rotate through over the course of the class? (Assume I can plan well, and class takes 75 minutes).

The area of a sector



Area of sector

The area of a sector with central angle θ of a circle of radius r is:

Linear vs angular speed

If a wheel is spinning without slipping, one thing we might be interested in is its angular speed. This is a measure of how quickly the wheel is spinning. Your car measures angular speed in revolutions per minute. We'll usually use _____.

When we use radians per second to measure how fast a wheel is spinning, it's a fun fact that you can calculate linear speed if you know angular speed. We'll denote angular speed with _____ and linear speed with _____. If the wheel has radius r, then these two speeds are related by:

$$v =$$

Example

We know the radius of the earth at the equator and that Earth spins 1 time in 24 hours. Use these facts to calculate how fast (linear speed) someone standing on the equator of the earth is going just by standing still!