Question of the Day

What is the weirdest food you have ever eaten?

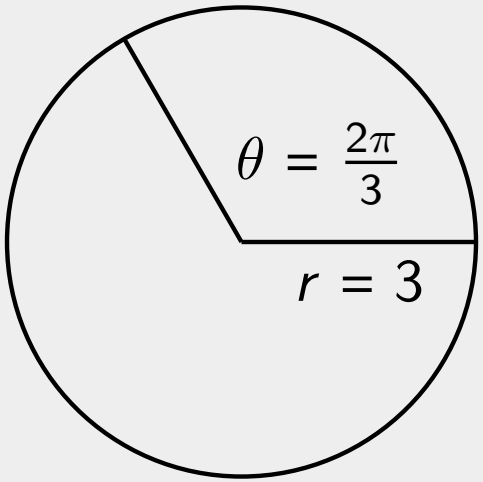
On the Docket

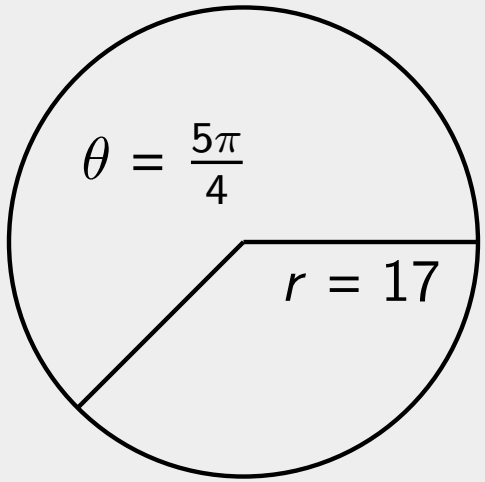
Concept Review: Arc Length, Area and Angular Speed
Concept Review: Trig Functions and the Circle
Concept Review: The Unit Circle
Quiz

Arc Length, Area and Angular Speed

Exercise 1

Given the circles below, calculate the arc lengths and sector areas described.





Exercise 2

1. On Earth, what is the angular speed at the equator?
2. If the radius of the Earth at the equator is 6318 km, what is the linear speed?

Exercise 1

Compute the following

1. $\sin\left(\frac{2\pi}{3}\right)$ and $\sin\left(-\frac{2\pi}{3}\right)$.
2. $\cos\left(\frac{7\pi}{6}\right)$ and $\cos\left(-\frac{7\pi}{6}\right)$.
3. $\tan\left(-\frac{\pi}{4}\right)$ and $\tan\left(-\frac{7\pi}{4}\right)$.
4. $\sin\left(\frac{9\pi}{4}\right)$.
5. $\sec\left(\frac{25\pi}{6}\right)$.
6. $\tan\left(\frac{4\pi}{3}\right)$.
7. $\sin^2\left(\frac{5\pi}{3}\right) + \cos^2\left(\frac{5\pi}{3}\right)$.
8. $\tan^2\left(\frac{5\pi}{3}\right) + 1$.

Exercise 2

1. List the trigonometric functions.
2. Discuss the domain and range of each function.
3. Sketch a graph of each function.
4. Repeat the above three for the inverse trig functions.

The Unit Circle