MTH 201 -- Calculus
Module 4B: Derivatives of sine and cosine

September 30-October 1, 2020

Agenda for today

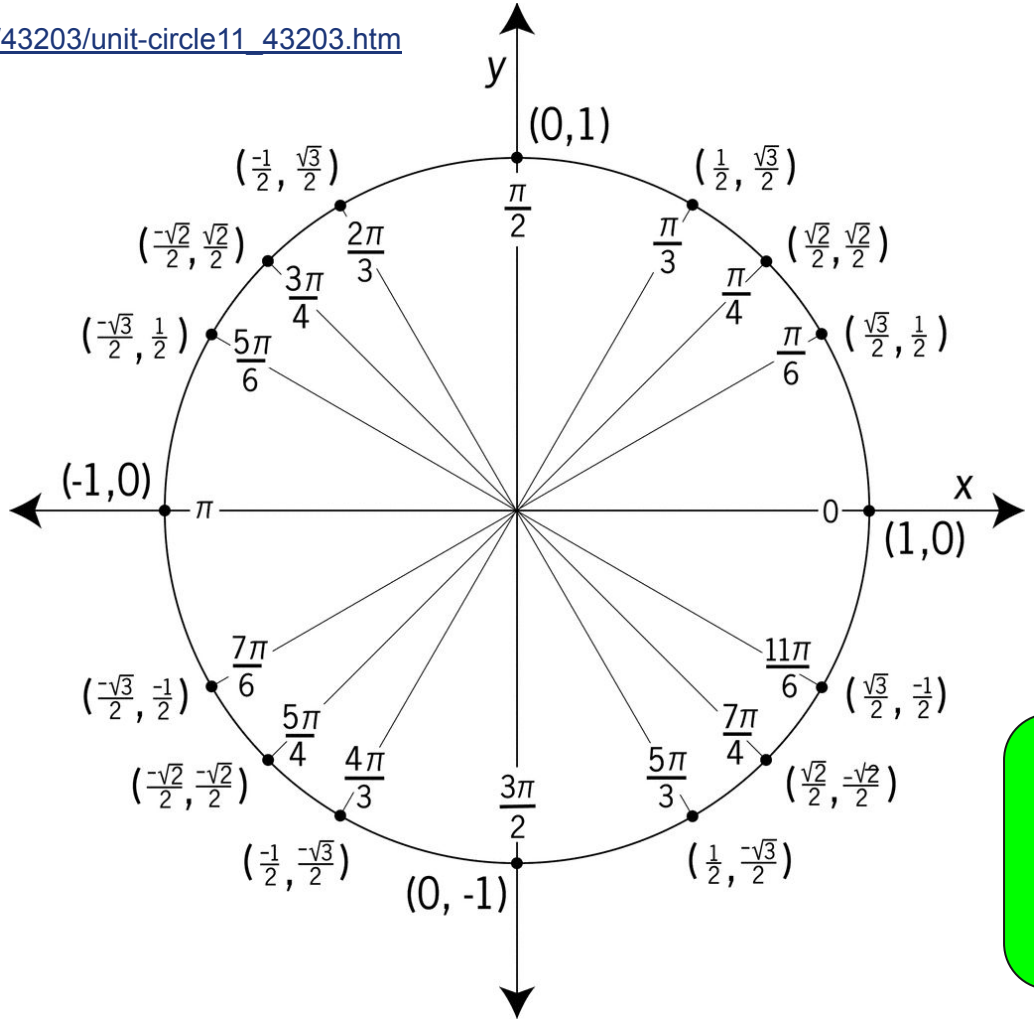
- Polling activity over Daily Preparation + Q&A time
- Activity: Using the derivatives of sin(x) and cos(x)
- Recap: Polling questions
- Feedback time

Without using a calculator -- what is the value (not the derivative) of $\sin(\pi/2)$?

- 0
- $1/2$
- $\sqrt{3}/2$
- 1
- Undefined
- None of the above

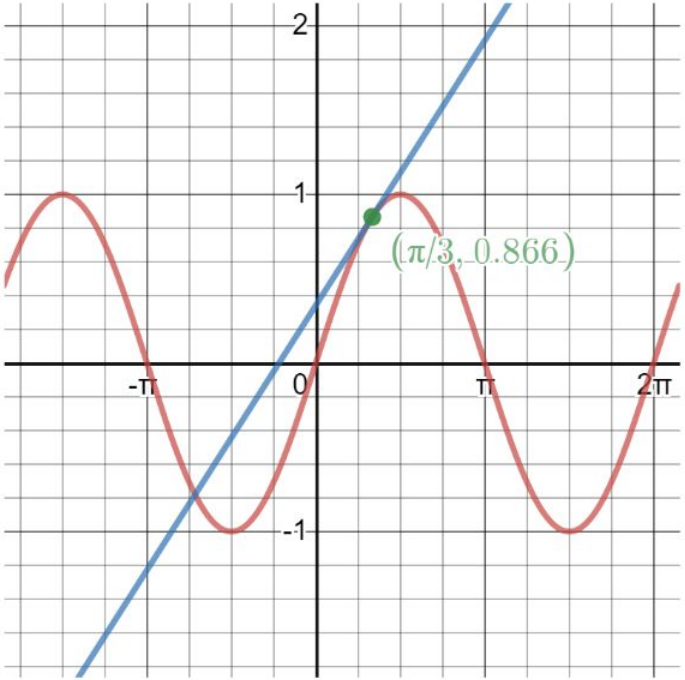
To 0

https://etc.usf.edu/clipart/43200/43203/unit-circle11_43203.htm



Be able to state the values of sine and cosine for all 16 special angle values shown on the unit circle.

Here's the graph of the function $y = \sin(x)$ and its tangent line at $x = \pi/3$. The slope of this line is exactly



- $1/2$
- $\pi/3$
- $\pi/2$
- $\sqrt{3}/2$
- 1
- The exact value cannot be determined with only this information

To 0

Open Q&A

Practice with the new concepts: Go to the Jamboard for your section/group.

The slope of the tangent line to $y = x + \sin(x)$ at $x = \pi/2$ is

- 1
- $1 + \pi/2$
- 2
- $1 + \cos(x)$
- None of the above

The *second* derivative of $y = x + \sin(x)$ is

- $-\sin(x)$
- $1 + \cos(x)$
- $1 - \sin(x)$
- $x + \sin(x)$
- None of the above