MATH 150

Today

1. WeBWorK
2. 6.3: Limits and derivatives of trig functions
3. Homefun 17

Goals:

1. Limits of trig functions (Understand indeterminate limits of trig functions)
2. Derivatives of trig functions (Understand and be able to calculate derivatives of trig functions)

Where is today's material used?

1. Physics (e.g., optics, mechanics)
2. Fourier series, based on trig functions, are used to model periodic behavior.

Warm-up

Section 6.1 #92.

6.3 Limits and Derivatives of Trig Functions

1. **Theorem**: The trig functions are continuous on their domains.
2. Asymptotes and end behavior of trig functions
3. $\lim_{\theta \to 0} \frac{\sin \theta}{\theta} = 1, \lim_{\theta \to 0} \frac{1 - \cos \theta}{\theta} = 0.$

4. Derivatives of trig functions ($\frac{d}{dx}\sin\theta = \cos\theta$, $\frac{d}{dx}\cos = -\sin\theta$, etc.)
5. Examples. p. 434: 23-42, 43-68

Next Time

1. 6.4: Inverse trig functions