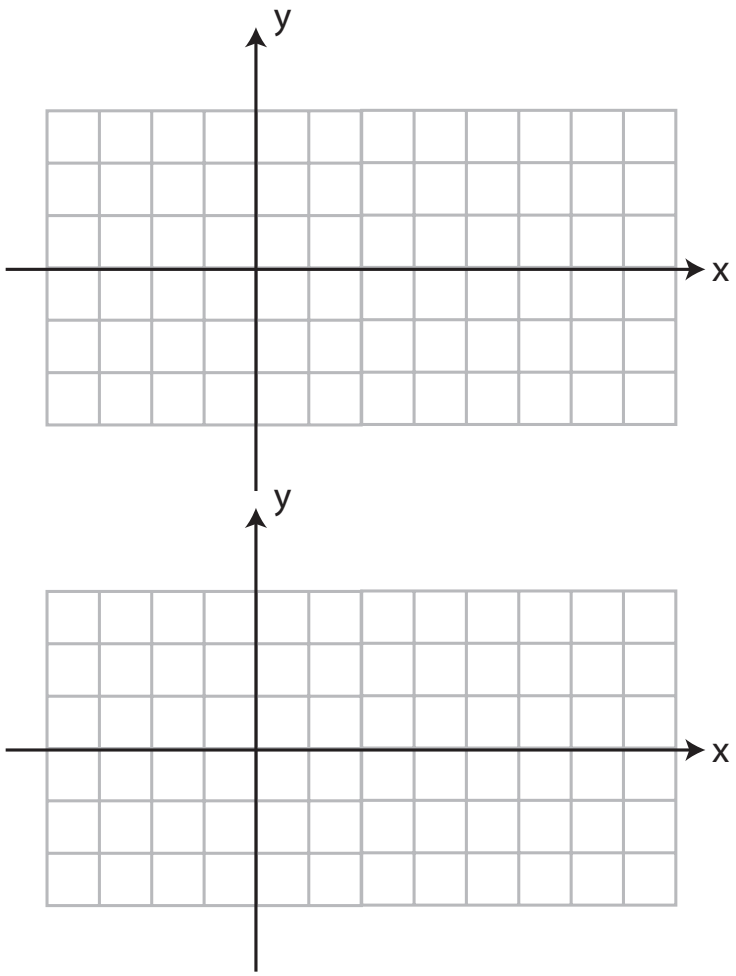
Derivatives of Trigonometric Functions

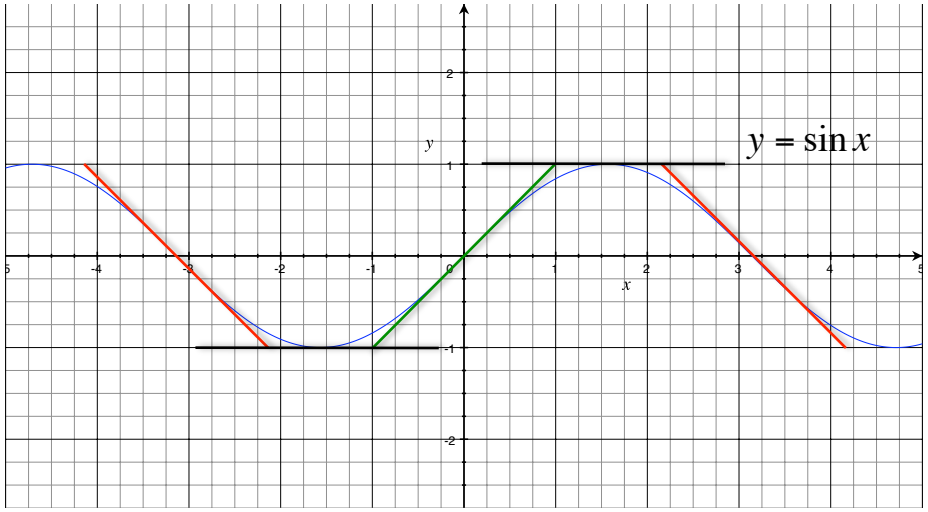
Section 3.3

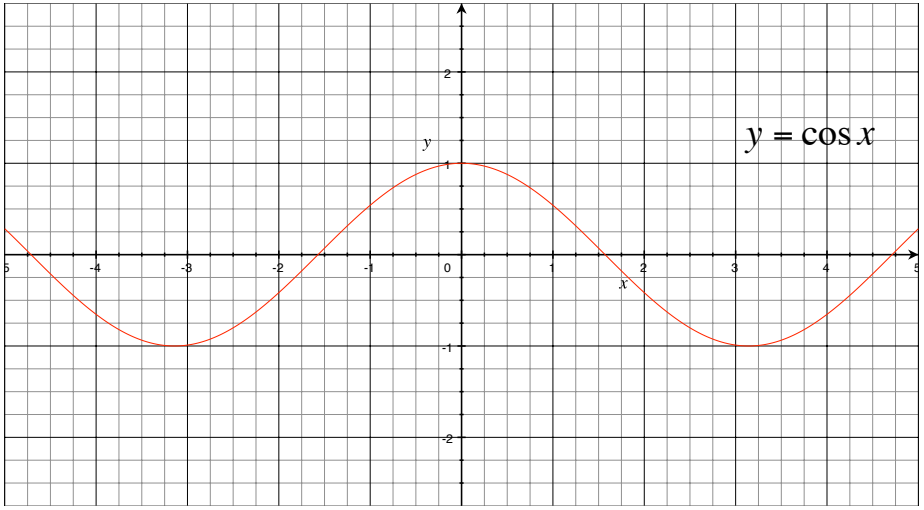
Derivatives of Trigonometric Functions

Given the graph of $y = \sin x$, sketch the graph of y'.



Derivatives of Trigonometric Functions





Derivatives of Trigonometric Functions

So we have that

$$(\sin x)' = \cos x$$

Using a similar geometric argument, we can see that

$$(\cos x)' = -\sin x$$

Example:

Prove that $(\tan x)' = \sec^2 x$.

Derivatives of Trigonometric Functions

Example:
Find an equation of the tangent line to the curve

$$y = e^x \cos x$$

at the point $(0,1)$.