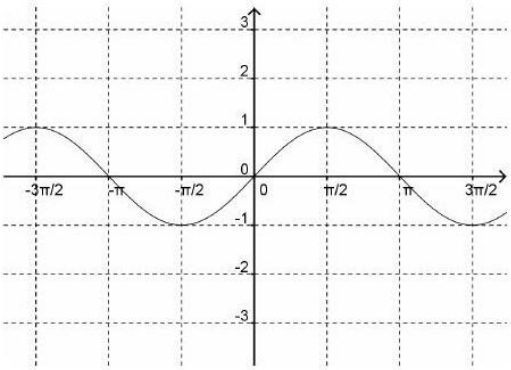
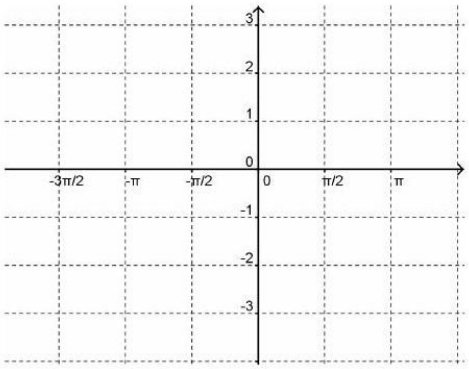
Math 1210 #11
Derivatives of Trigonometric Functions

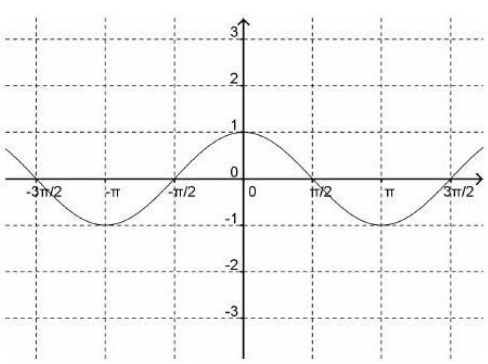
The derivative of $f(x) = \sin\ x$

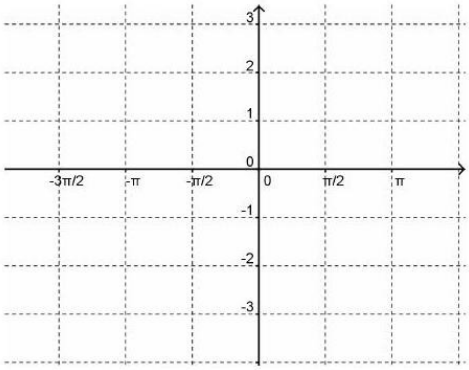




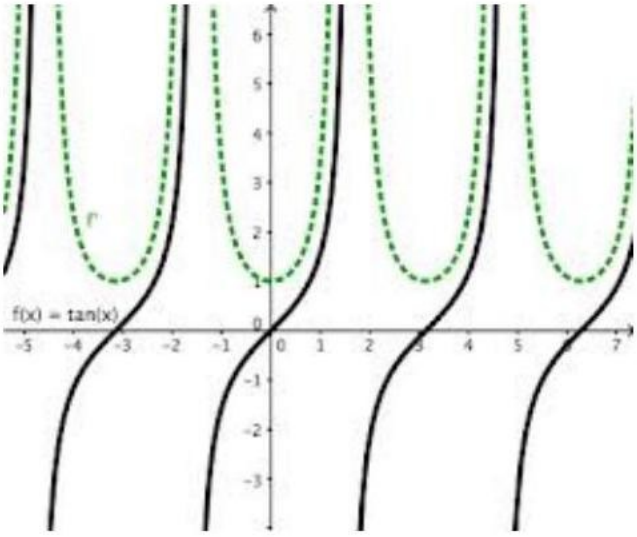
Use the definition of the derivative to find $D_x(\sin\ x)$.

The derivative of $f(x) = \cos\ x$





Here is a graph of y = tan x (black) and its derivative (green). Can you guess what it might be?



EX 1

Find y′ for these functions.

1a)

$y = \sin^2 x$

1b)

$y = \cot x$

1c)

$y = \dfrac{x\cos x + \sin x}{x^2 + 1}$

1d)

$y = \sin^2 x + \cos^2 x$

EX 2

Find the equation of the tangent line to $y = \cot\ x$ at $x = \pi/4$