Precalc 15.6

Use the product rule to find derivatives

Use the quotient rule to find derivatives

Quiz Fri. 15.5-15.6

Friendly functions:

$y=e^x$

$y=\sin x$

$y=\cos x$

$y=\ln|x|$

$x \cdot -\sin x \quad \cos x \cdot 1$

ET

$y = 2e^x + x^2 \sin x - 4x\cos x$

$y' = 2e^x + (x^2 \cdot \cos x + \sin x \cdot 2x) - 4(\sin x + \cos x)$

$x^2\cos x \quad 1 \cdot 2x \sin x \quad +4\sin x \quad +4\cos x$

$y' = 2e^x + x^2\cos x + 2x\sin x + 4\sin x + 4\cos x$

$4(\quad)$

May 5-8:18 PM

Quotient rule:

Angels we have heard on high

$y = \frac{x^2}{\sin x}$ high, d high $2x$; low, d low $\cos x$

$\frac{\text{low d hi} - \text{high d low}}{\text{denom}^2}$

$y' = \frac{\sin x \cdot 2x - x^2 \cdot \cos x}{(\sin x)^2}$

$y' = \frac{2x\sin x - x^2\cos x}{\sin^2 x} = x\frac{(2\sin x - x\cos x)}{\sin^2 x}$

May 5-8:22 PM

y=sinx/2x²

y=e^x/cosx

$y = \frac{\sin x}{2x^2}$ H. dH cosx L dL 4x

$y' = \frac{2x^2 \cdot \cos x - \sin x \cdot 4x}{(2x^2)^2}$

$y' = \frac{2x^2\cos x - 4x\sin x}{4x^4}$ (-1) GCF

$y' = \frac{x^2\cos x - 2x\sin x}{2x^4}$

May 5-8:23 PM

y=tanx

$y = \frac{\sin x}{\cos x}$ H dH cosx L dL -sinx

$y' = \frac{\cos x \cdot \cos x - \sin x \cdot -\sin x}{\cos^2 x}$

$= \frac{\cos^2 x + \sin^2 x}{\cos^2 x} = \frac{1}{\cos^2 x} = \sec^2 x$

May 5-8:24 PM

practice WS

ET

$y = \frac{e^x}{\cos x}$

WS 15.6
11-20

May 5-8:25 PM

Mar 25-5:44 PM

Attachments

AngelsWeHaveHeardOnHigh1.mid