Name KEY (Partial) Date Period

Worksheet 2.2—Derivatives on the Calculator

Please use your calculator.

Short Answer

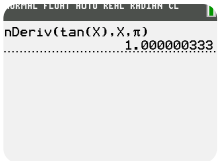
1. Evaluate the following derivatives on your calculator. Be sure to interpret your calculator's answer correctly.

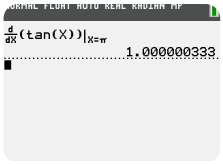
(a) $f'(\pi)$, if $f(x)=\tan x$ (b) $\left.\frac{dy}{dx}\right|_{x=3}$ if $y=\frac{|2x-6|}{4}$ (c) $y'(2.3)$ if $y=\sqrt{x+1}$

classic: nDeriv(tan(X), X, π)

MATH 8 mathprint: $\frac{d}{dx}(\tan(x))|_{x=\pi}$

$f'(\pi)=1$





2. Use your calculator to sketch the graph of the derivative of the following functions. Use the calculator's graph to sketch your own graph below and then to identify the equation of the derivative function.

(a) $g(x)=\sin x$ (b) $f(x)=\ln x$ (c) $y=-\ln|\cos x|$

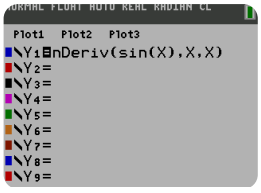
calculates for all x in window

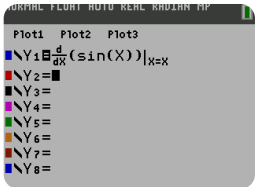
Y= Y1= MATH 8

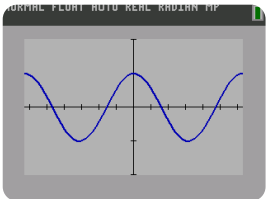
classic: y1= nderiv(sinx, x, X)

mp: y1= $\frac{d}{dx}(\sin(x))|_{x=x}$

WINDOW: x[-2π, 2π], y[-2, 2]







if g(x) = sinx, it appears that g'(x) = cosx.

3. If $f(x)=\frac{|x|\cos x}{e^{-x}}$, use your calculator to find $f''(-2)$, the second-derivative of $f(x)$ at $x=-2$.

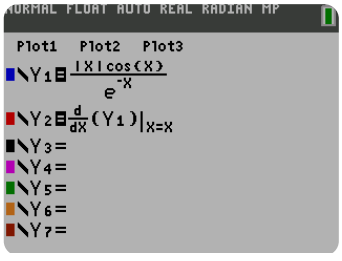
y1 = f(x) = $\frac{|x|\cos x}{e^{-x}}$

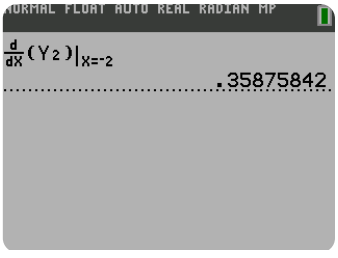
y2 = f'(x) = nderiv(y1, x, x)

Home screen

nderiv(y2, X, -2)

$f''(-2)=0.358$





All done in Math Print