Lesson 27

Hw Leader:

lesson 27

Tongent line equentions Higher order denyeathers

* Test 1 back at the end

Period 3

Anya K.

Vanessa 17.

A WS on Representations Due Friday 4/8

* 6 point curve on Test

IF you come in to Oaffice hours and explain to me your mistakes out the

tight arones

Equation of the Tangenthine

Given a function fex that is differentiable the tangent line at x=a is

Y=f(a)(x-a)+f(a)
Recall: For aline rued a slope and point) [Point-Slope form]

ine meda slope and point / [

Ex. 27.2

Find the equation of the tengent to the graph of y= x = 4x+3 K derivative of 3 when x = 3.

dy = 2x - 4

(dx) = 2(3) -4 = 24 line at x=3

Point (3,0 y=(3)2-4(3)+3=0 When X=3

y=2(x-3)+0=2x-6 lingust line:

Allows us to approximate the function value near x=3,

X X

Ex. 27.3 First the Equestion of the line tengent to y=sinx when x= 1/2.

When
$$k=T_{N_0}$$
, $y=S(1)=1$

Slope:
$$\frac{ch_3}{dx} = Cus(x)$$
 $\frac{ch_4}{dx} |_{T_h} = Cus(\frac{T}{N}) = \frac{\sqrt{3}}{2}$

Tangent line:
$$y = \sqrt{3}(x-76) + \frac{1}{2}$$

Higher Order Derivatives:

. If a function is differentiable then its derivative is another function called the first derivative. . If the first dentative is differentiable, then its obviousive is a fluction called the Second denotive.

Nobation

Function: f(x) or y

Instantaneous Rute of Change of f(x) Slope of tungent line of fat x First Derivative: fix) or dy

x to if to

of f'(x)

Second Derivative: f"(x) or dx

nth Derivative: f⁽ⁿ⁾(x) or dⁿy

Ex. let y= 443- 12. Find de 1/2/2

$$\frac{d^2}{du^2} = 3 - \frac{6}{16} = \frac{42}{16} = \frac{21}{8}$$

8/31/12

Lesson 27

Agenda: 8/31/15

Hw Leader:

lesson 27

Higher order deniatives Tongent line Equations

* Test 1 back at the end

Period

Anya K.

Period 4

Thesolay 4/8 * WS on Representations Due Friday Vennesson H.

* 6 point curve on Test

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tight arones

Equation of the Tongentline

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$$y = f'(a)(x - a) + f(a)$$

4 = f(a)(x-a) + f(a)
[Point-Slope form]

(a, fcm) f(m)

Ex. 27.2

Find the equation of the tangent to the graph of y= x = 4x+3 derivative of 3

dx = 2x - 4

Slope of tangent line at x=3 2(3) -4 = 24 1 - [-] xx

Point (3,0 4=(3)2-4(3)+3=0 When X=3

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Ex. let y= 4u3- 12. Find dex/2

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