

Math 151

Show Your Work!

Good Luck!

October 23, 2018

Quiz #4 A

Name _____

(please print)

1. L and W are FUNCTIONS of t.

$$\frac{d}{dt} e^{5W} = \underline{\hspace{2cm}} \quad \frac{d}{dt} \ln(x^3 + L) = \underline{\hspace{2cm}} \quad \frac{d}{dt} L \cdot W^4 = \underline{\hspace{2cm}}$$

(1 each)

2. Calculate the following derivative.

(3) $y = e^{3x} + \cos(5x)$ $y'' =$

3. The location of a bug at time t minutes is $x(t) = t + t^3$ $y(t) = 5t^2 + 2t$ feet. (UNITS!)

(2) (a) When $t=1$ the speed of the bug is _____

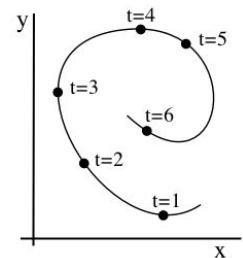
(4) (b) When $t=1$, the equation of the tangent line to the bug's path is $y =$ _____

(Show your work!)

4. Fill in each blank with + - 0 or und

(3)

t	dx/dt	dy/dt	dy/dx
5			



5. A boat is being pulled toward a 5 foot high dock. When the boat is 12 feet from the dock the rope is 13 feet long and is being pulled in at a rate of 6 feet per minute. How fast is the boat moving? _____ (2 decimal places)

(B = distance of boat from dock, R = length of the rope. Show your work!!)

(6)

