MAC 2311 Hybrid Calculus I (B)

Section **3.1**

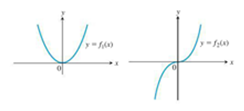
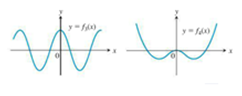
1. Use the limit definition of the derivative (only) to find the slope of the tangent line to

at the point (1, 2). ANS: Use

2. Use the limit definition of the derivative (only) to find a function that gives the slope of the tangent line to . ANS: Use

3. Use the limit definition of the derivative (only) to find the equation of the tangent line to at ANS: for slope use, so *y* =2*x*

4. Given the graph of sketch the graph of.

5.If the line tangent to the curve *y* = *f* (*x*) at (5, 18) is = 4*x* – 2, then 4

6. If the line tangent to the curve *y* = *g* (*x*) at (5, 18) is = 4*x* – 2, then 4

7. True/False: if a function is continuous, it is differentiable; and if a function is differentiable it is continuous. Explain with examples. ANS: False

8. Give 3 different cases, with examples, when a function is not differentiable.

ANS: (1) Disc (y= |x|/x at x=0), (2) Cusp (y= |x| at x=0), (3) VTL (y= x^(1/3) at x=0),