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Ch. 2 LTQ 1 Retake 2 Assignment

1. What is a derivative?
2. What is the limit definition of a derivative and what algebra formula is it based off of?
3. What does it mean to be continuous?
4. What does it mean to be differentiable?
5. There are 5 places we discussed where a function is not differentiable. Please name those places and explain why each is not differentiable.
6. What 3 things could be occurring at a location of a horizontal tangent line?
7. How would you estimate the slope of a tangent line?
8. What does a negative tangent line slope imply about the function it is tangent to?
9. What does a positive tangent line slope imply about the function it is tangent to?
10. When sketching the graph of a derivative, how do you know where to put the x-intercepts? Explain.

11. Sketch the graph of the derivative of each of the following functions.





1. Find the derivative of the following:

a) $g\left(x\right)=4x-3$ b) $f\left(r\right)=2r^{3}+r$

c) $h\left(t\right)=\frac{2}{x-4}$ d) $p\left(b\right)=\sqrt{3b+1}$

1. What is the slope of the line tangent to *f(r)* in question 12b at the point when r = -3?
2. Write the equation of the tangent line at the point (5,4) of the function *p(b)* in question 12d.