Math 30

Review for Exam 1

Make sure you can do the following types of problems

1. Evaluate limits of functions by looking at a graph.
2. Calculate limits by using appropriate tricks including canceling a factor, multiplying by the conjugate, multiplying the numerator and denominator by the reciprocal of the highest power of the variable.
3. Evaluate limits involving absolute values.
4. Evaluate a trig limit by using $\lim_{x\to\infty} \frac{sin(x)}{x} = 1$.
5. Use limits to find horizontal and vertical asymptotes of a function.
6. Find derivatives by using the definition of the derivative.
7. Determine from a graph where a function is not differentiable.
8. Use the sketch of a function to sketch the derivative function.
9. Use differentiation formulas including the power rule, the product rule, the quotient rule, and the chain rule.
10. Find the equation of a tangent line and normal line to a curve going through a specified point on or off the curve.
11. Differentiate implicitly.