Instructions. The midterm for the class will happen upcoming Monday, October 28. The goal of this worksheet is two-fold:

1. To review the important topics for the midterm
2. To solve the practice midterm problems

TOPICS
(a) Review of functions (linear, exponential, logarithmic and trigonometric functions.)
(b) Definition of the limit and how to find the limit of a function with algebraic methods or from the graph of a function. This includes one-sided limits.
(c) Vertical and horizontal asymptotes of a function by algebraic computations or by graphical interpretation of the function.
(d) The slope of the tangent line and its limit definition, its relationship with the secant line and how to interpret the limit definition graphically.
(e) The meaning of the derivative of a function, its limit definition and how to use the limit definition to find the derivative of a given function.
(f) The equation of the tangent line to a function \( f(x) \) at a given point.
(g) Derivative Rules (including Power Rule, Product Rule, Quotient Rule, and Chain Rule). Knowing derivatives of \( \sin(x), \cos(x), e^x, \ln x \) and \( b^x \) for any base \( b > 0 \).

SAMPLE MIDTERM
After you have finished reviewing the relevant topics above, you can work in groups on the sample midterm. It is posted both on the Course Webpage and Canvas (under Files \( \rightarrow \) Extra Practice).