Pre-class activity

Name: _____

Math 1110 - Instructor: Itamar Oliveira

due next class

We haven't started Calculus yet: chapter 1 provides a review of basic concepts that will show up almost everywhere. We will go over some of them next time.

(1) Review the concepts of domain, range, graph, even, odd, polynomial, rational and piecewise defined functions (section 1.1).

(2) For each function below, answer the following questions: can it be defined for all real numbers? Is it even? Is it odd? Is it a polynomial? Is it a rational function?

(a) $f(x) = x^{\frac{3}{2}}$.

(b) $f(x) = \dfrac{x^3 + x^2}{x + 1}$.

(c) $f(x) = \sqrt{x}$.

(d) $f(x) = x^{-5} + 3x^3 + \pi x$.

(3) Give an example of a piecewise defined function with at least **four** different pieces and draw its graph.

(4) Recall the definitions of sum, difference, product and quotient of functions (section 1.2) and give an example of a domain where $f(x) = x^2 - 9$ divided by $g(u) = u - 3$ can be defined.

(5) We will talk about shifting and scaling functions next time. Review composite functions (page 15) and read examples 3 and 4 of section 1.2.

(6) Recall the six basic trigonometric functions, as well as the identities on pages 24 and 25 (section 1.3).

(7) Recall the rules for exponents on page 35 (section 1.5).