

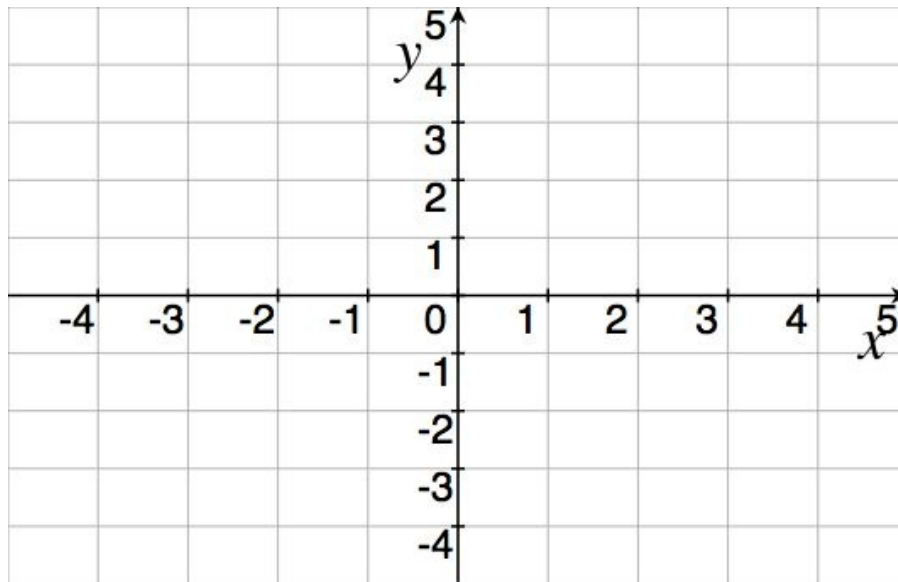
TMATH 124: Quiz 1

You may use any work of yours that you made from last week. This includes, practice book problems and worked out WebAssign problems. This *does not* include notes taken during class, notes copied from the book, photocopies of notes from the book or tutorials shown on WebAssign. Graphing calculators are also not allowed. In short, you are only allowed to use *work* that you created.

Show *all* your work (numerically, algebraically, or geometrically) for each and simplify. No credit is given without supporting work.

1. Let $f(x) = \begin{cases} (x+2)^2 & \text{if } -4 \leq x < -1 \\ 2^x & \text{if } -1 \leq x \end{cases}$

(a) [2] *Carefully* graph f on the axis provided



(b) [2] Find the following if they exist:

$$\lim_{x \rightarrow -1^+} f(x)$$

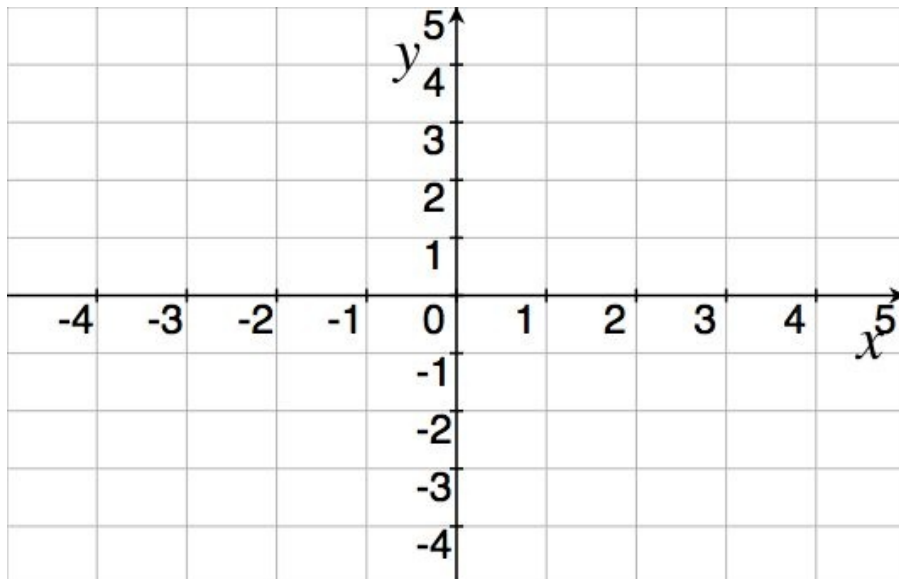
$$\lim_{x \rightarrow -1} f(x)$$

2. [3] Sketch the graph of an example function g that satisfies the following conditions:

(a) $\lim_{x \rightarrow 1} g(x) = 2$

(b) $g(2) = -1$

(c) $\lim_{x \rightarrow -2} g(x) = \infty$



3. [3] Determine the following, if they exist:

$$\lim_{x \rightarrow 3^+} \frac{2}{x + 3}$$

$$\lim_{x \rightarrow 3} \frac{x^2 - x + 6}{x - 2}$$