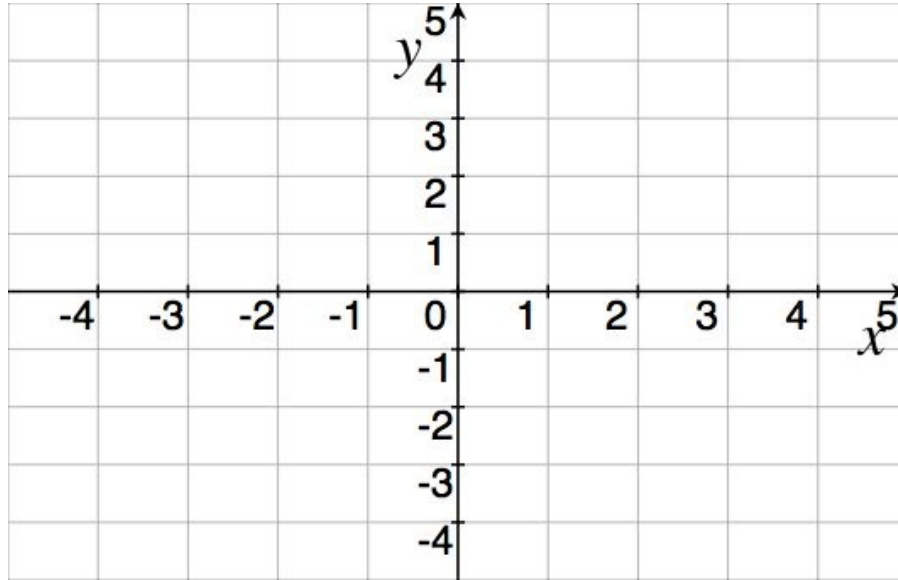


TMATH 124am: Quiz 1

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

1. (§2.2 #12) Let $f(x) = \begin{cases} 1 + \cos(x) & \text{if } x < 0 \\ -x^2 + 2 & \text{if } 0 < x \end{cases}$

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

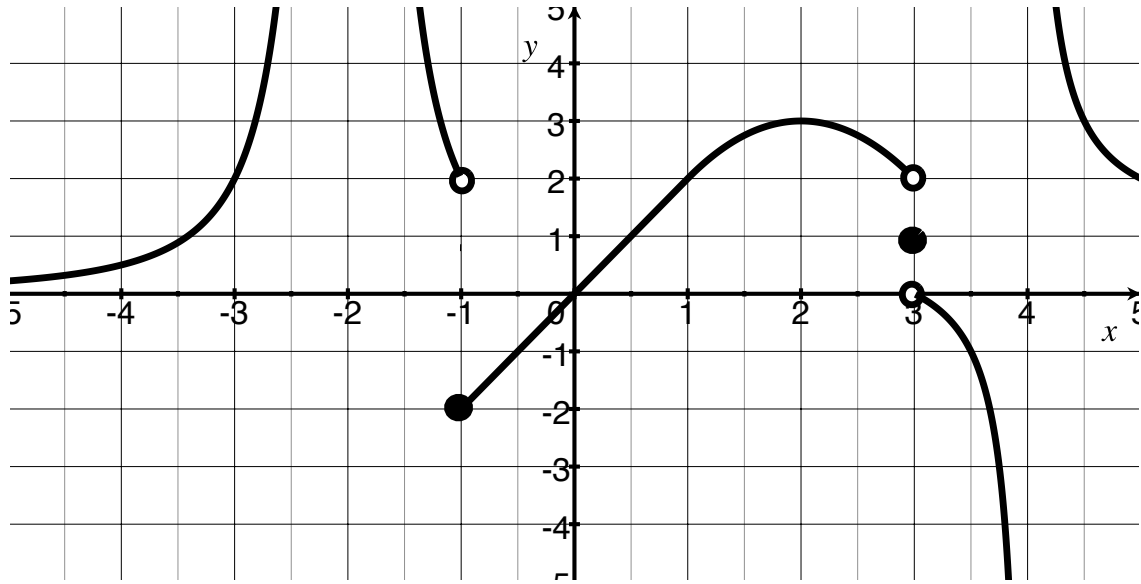


(b) [1] Determine the values of c for which $\lim_{x \rightarrow c} f(x)$ exists.

2. [2] (§2.2 #33 & WebHW2 #7) Determine the following, if they exist:

$$\lim_{x \rightarrow 3^+} \ln(x^2 - 9) \qquad \lim_{x \rightarrow 1} \frac{x^3 - 1}{x^2 - 1}$$

3. [5] For the function R whose graph is given, state the value of each quantity, if it exists.



$$\lim_{x \rightarrow 1} R(x)$$

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

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

$$\lim_{x \rightarrow -2} R(x)$$

$$\lim_{x \rightarrow 4^+} R(x)$$