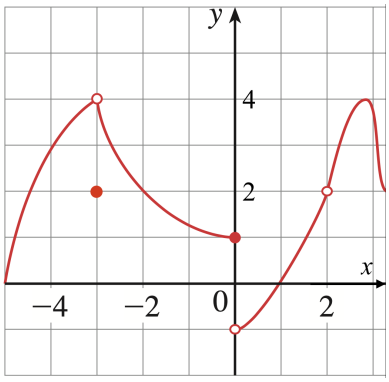
Quiz #3, 9/10
Math 156 (Calculus I), Fall 2024

Problem 1 is worth 8 points and Problem 2 is worth 2 points, for a total of 10 points. Remember to *show your work* on all problems!

1. Consider the function $f(x)$ graphed below:



For each of the following values of a: i) say what $\lim_{x\to a} f(x)$ is or state that it does not exist; ii) say what $f(a)$ is or state that it does not exist; iii) state whether $f(x)$ is continuous at a.

(a) $a = -3$

(b) $a = 0$

(c) $a = 1$

(d) $a = 2$

2. The position (in meters) at time t (in seconds) of a car driving down a straight road is given by the function $f(t)$. What does the quantity $\lim_{t\to 7} \dfrac{f(t) - f(7)}{t - 7}$ represent?