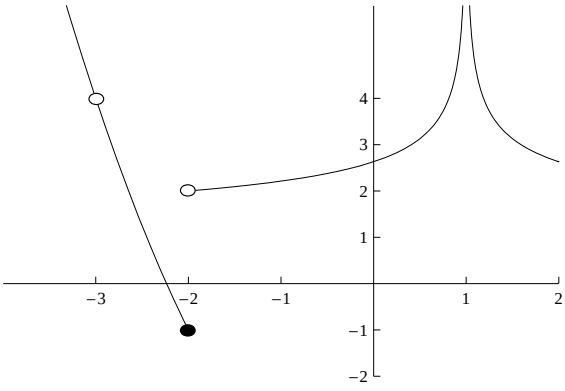
1. **(4 points)** For the plot of $g(x)$ shown below, indicate whether or not each of the following quantities can be evaluated. If they can be evaluated, compute their values. If they cannot be evaluated, explain why.



$g(-2)$

$\lim_{x\to -3^-} g(x)$

$\lim_{x\to -2} g(x)$

$\lim_{x\to 1^+} g(x)$

2. **(4 points)** The table below describes the distance traveled on a cross-country drive over a six-hour period.

Time	Noon	1PM	2PM	3PM	4PM	5PM	6PM
Distance in miles	0	65	150	230	270	350	420

Calculate these properties of the trip:

(a) **(2 points)** The average speed over the course of the entire six-hour period.

(b) **(2 points)** The average speed between 2:00 PM and 4:00 PM.

3. **(4 points)** Evaluate the following limits, or explicitly state that they do not exist and explain why they cannot be evaluated.

(a) **(2 points)** $\lim_{x\to 1} \frac{x^2-4}{x^3-3x+4}$

(b) **(2 points)** $\lim_{s\to 4} \sqrt{4-s}$

4. **(4 points)** Using epsilon-delta methods, prove that $\lim_{x\to 2} \frac{2x^2-7x+6}{x-2} = 1$.

5. **(4 points)** Find a value of a such that the given function is continuous everywhere:

$$f(t) = \begin{cases} at \text{ if } t \leq 3 \\ t^2 - a \text{ if } t > 3 \end{cases}$$

6. **(2 point bonus)** Show that the equation $x^2 - 3 = x^4$ has at least two solutions.