

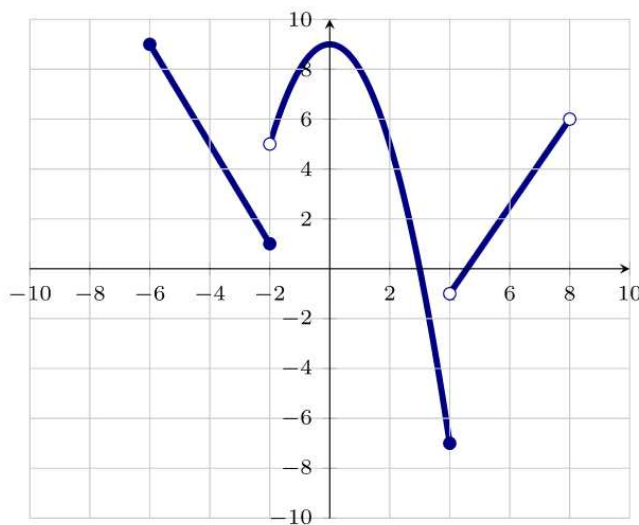
YOUR NAME: _____

George Voutsadakis

Read each problem **very carefully** before starting to solve it. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. **GOOD LUCK!!**

- [5 points] Compute the difference quotient of $f(x) = \frac{1}{x+2}$ at $x = 1$ and simplify.

- [3 points] Based on the graph of $y = f(x)$ compute:



$$\lim_{x \rightarrow -2^-} f(x) =$$

$$\lim_{x \rightarrow -2^+} f(x) =$$

$$\lim_{x \rightarrow -2} f(x) =$$

$$\lim_{x \rightarrow 4^-} f(x) =$$

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

$$\lim_{x \rightarrow 4} f(x) =$$

3. Compute the following limits:

(a) [2 points]

$$\lim_{x \rightarrow -2} (5x^2 + 9x) =$$

(b) [5 points]

$$\lim_{x \rightarrow 3} \frac{3 - x}{\sqrt{5x + 1} - 4} =$$