Homework 1

Find the limit (if it exists).

1. $\lim\limits_{x \to -4} \dfrac{x+4}{x^2+9x+20}$
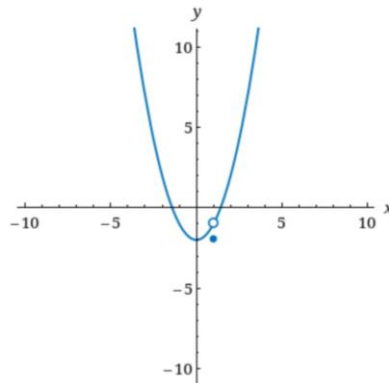
2. $\lim\limits_{x \to 7} \dfrac{3x}{\sqrt{x+2}}$

3. $\lim\limits_{x \to 1} \dfrac{x-3}{x^2+4x-21}$

4. Use the graph to find the limit (if it exists). (If an answer does not exist, enter DNE.)

$$\lim\limits_{x \to 1} f(x)$$

$$f(x) = \begin{cases} x^2 - 2 & , x \neq 1 \\ -2 & , x = 1 \end{cases}$$

5. Use the graph to find the limit (if it exists). (If an answer does not exist, enter DNE.)

$$\lim\limits_{x \to 4} \dfrac{|x-4|}{x-4}$$