

Name _____

Section _____

SHOW DETAILS (algebra, limit laws) in the space next to each problem. Do **NOT** use l'Hôpital's rule. Answers may be a specific number, $+\infty$, $-\infty$, or Does Not Exist (DNE).

YOU MUST GIVE SOME SUPPORTING EVIDENCE. AN ANSWER ALONE WILL NOT RECEIVE FULL CREDIT.

1.
$$\lim_{x \rightarrow 2} \frac{x^3 - 4x}{x - 2}$$

Answer to 1 _____

2.
$$\lim_{x \rightarrow 2} \frac{\frac{1}{x} - \frac{1}{2}}{x + 2}$$

Answer to 2 _____

3.
$$\lim_{x \rightarrow 1} \frac{x^2 - 3x + 2}{2x^2 - x - 1}$$

Answer to 3 _____

OVER

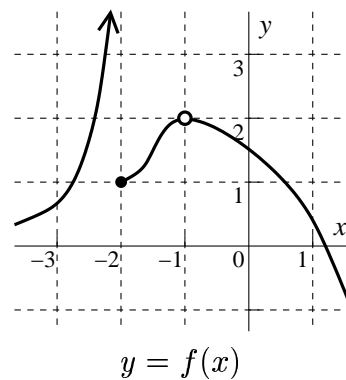
$$4. \lim_{x \rightarrow 0} \frac{1 - \sqrt{x^2 + 1}}{x^2}$$

Answer to 4 _____

5. Use the graph displayed to the right to complete the limit statements below. No justification needs to be given.

Answers to 5

$$\lim_{x \rightarrow -2^-} f(x) = \underline{\hspace{2cm}} \quad \lim_{x \rightarrow -2^+} f(x) = \underline{\hspace{2cm}} \quad \lim_{x \rightarrow -1} f(x) = \underline{\hspace{2cm}}$$



$$6. \lim_{x \rightarrow 4} \frac{\frac{1}{x^2} - \frac{1}{16}}{x - 4}$$

Answer to 6 _____