

Name _____ Date _____

Instructions: Please show all of your work as partial credit will be given where appropriate, **and** there may be no credit given for problems where there is no work shown. All answers should be completely simplified, unless otherwise stated.

1. Find each limit, if it exists.

(a) $\lim_{x \rightarrow \infty} \frac{2x^3 + 4x^2 - 3x}{5x^4 - 7x}$

Answer 1(a): _____

(b) $\lim_{x \rightarrow \infty} \frac{6x + 3\sqrt{x^3} - 5}{-\sqrt{18x^3} + 1}$

Answer 1(b): _____

2. State whether this function is continuous or not. If the function is discontinuous, give the x-values where the discontinuities occur and also state why it's discontinuous.

$$f(x) = \frac{x^2 - 16}{x + 4}$$

continuous: Yes or No (circle one)

If no: it's discontinuous when $x =$ _____

why is it discontinuous? _____