Instructions: Show all of your work and circle your final answers. Calculators are allowed, but notes and books are not.

1. (5 points) Let \( f(x) = \frac{x^2 + 3x - 2}{\sqrt{x}} \). Find \( f'(x) \). (You do not need to use the limit definition of the derivative.)

2. (6 points) Find the equation of the line tangent to the graph of \( y = x^3 - 2x - 4 \) at \( x = 2 \). (You do not need to use limits for this.)

3. (9 points) The graph of \( y = g(x) \) is shown to the right. For each problem, evaluate the limit or explain why it does not exist.
   a. \( \lim_{x \to 1} g(x) \), b. \( \lim_{x \to -1} g(x) \), c. \( \lim_{x \to 3^+} g(x) \)

4. BONUS (2 points): From the graph of \( y = g(x) \) given above, calculate: \( \lim_{x \to -2} g'(x) \)