

Show all work and circle/box your final answer. All answers must be simplified unless stated otherwise.

- 1.** (10 points) Using asymptotes and the first and second derivative, sketch a graph of

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

The first and second derivative are given below:

$$f'(x) = \frac{2(x^2 + 4)}{(x - 2)^2(x + 2)^2} \text{ and } f''(x) = \frac{-4x(x^2 + 12)}{(x - 2)^3(x + 2)^3}$$