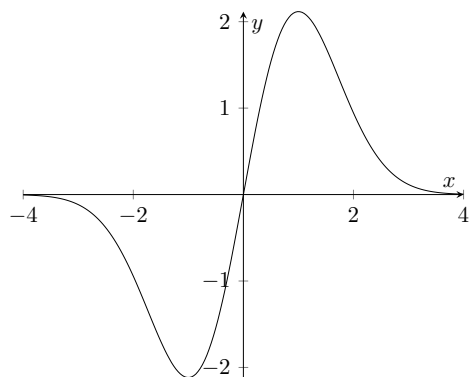


MA161 Quiz 8

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Problem 8.1. Use the of g below to sketch the graph of g' the derivative of g



Problem 8.2. Let

$$f(t) = \frac{2t + 1}{t + 3}$$

- Find the derivative of f at $t = a$ using the limit of the difference quotient definition.
- Find the horizontal and vertical asymptotes of f .

Problem 8.3. Given the piece-wise defined function

$$h(x) = \begin{cases} |x| & \text{if } x < 2 \\ 0 & \text{if } x \geq 2, \end{cases}$$

determine whether

- $h(x)$ is differentiable at $x = 0$,
- $h(x)$ is continuous at $x = 2$,
- $\lim_{x \rightarrow 0} h(x)$ exists.