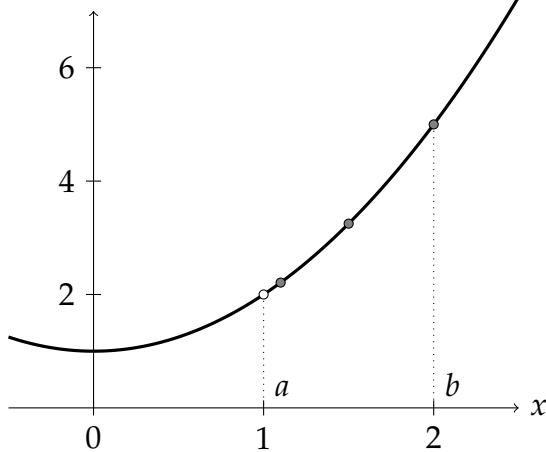


# Lecture Handout #09: Sep 27

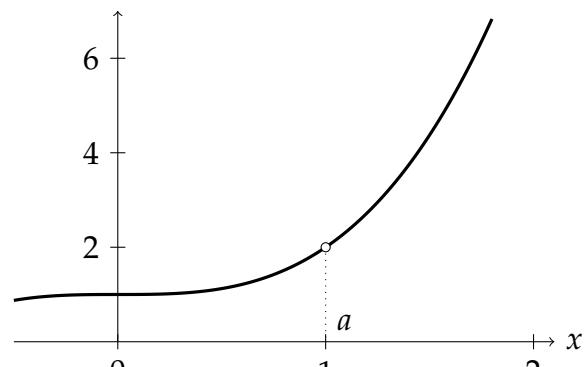
## Secant and Tangent Lines

$$f(x) = x^2 + 1$$



secant lines:  $a = 1, b = 2, 1.5, 1.1$

$$f(x) = x^3 + 1$$

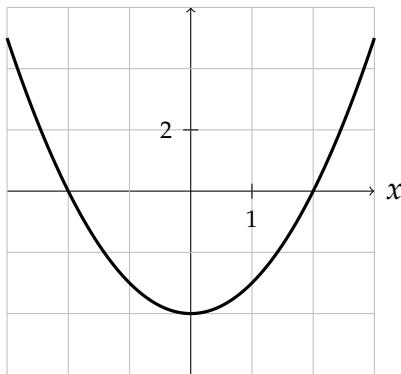


$$a = 1: \quad f(a) = \underline{\hspace{2cm}} \quad f'(a) = \underline{\hspace{2cm}}$$

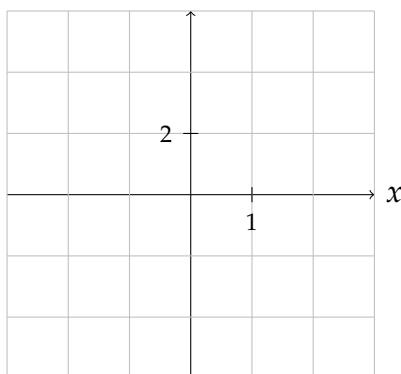
$$\text{tangent: } y = \underline{\hspace{2cm}}$$

## Comparing Graphs of $f(x)$ and $f'(x)$

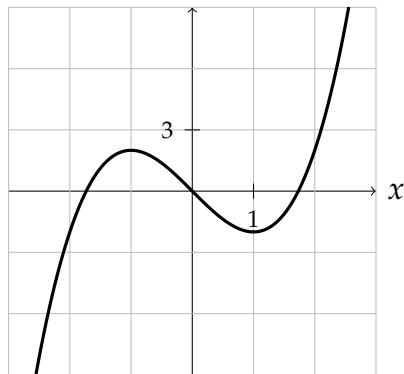
$$f(x) = x^2 - 4$$



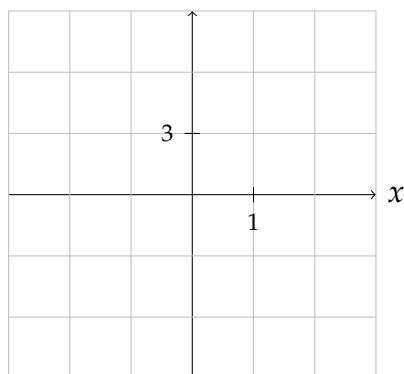
$$f'(x) = \underline{\hspace{2cm}}$$



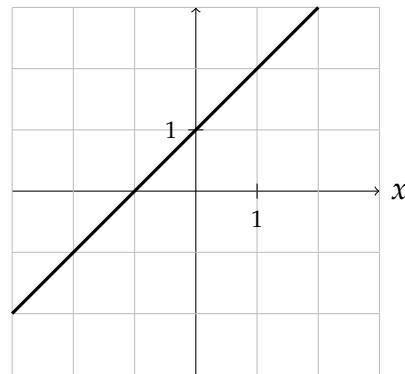
$$g(x) = x^3 - 3x$$



$$g'(x) = \underline{\hspace{2cm}}$$



$$h(x) = x + 1$$



$$h'(x) = \underline{\hspace{2cm}}$$

