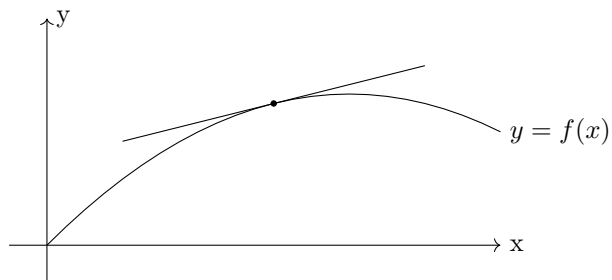


MATH 2D Prep: Tangent lines and Linear Approximation

Facts to Know:

1. Equation and graph of the tangent line to the curve $y = f(x)$ at the point (a, b) :



2. Linear approximation: use the tangent line to approximate $f(x)$ near $(a, f(a))$:

$$f(x) \approx$$

Examples:

1. Find an equation of the tangent line to the curve $y = e^x$ at the point $(-1, \frac{1}{e})$.

2. Use linear approximation to estimate the value of $(2.003)^3$.

$$f(x) = \quad , \quad a = \quad , \quad f'(x) = \quad , \quad f'(a) = \quad ,$$