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 \((2.003)^3\).

\[
f(x) = \quad , \quad a = \quad , \quad f'(x) = \quad , \quad f'(a) = \quad ,
\]