Quiz 6 MTH 140 Fall 2026

Monday, October 12, 2026 4:04 PM

find tangent line to $f(x)=xe^x$ at $x=2$

Soln: First find

$$y_0 = f(2) = 2e^2 \longrightarrow (x_0, y_0) = (2, 2e^2)$$

Now compute (with product rule)

$$f'(x) = e^x + xe^x$$

So our slope is

$$m = f'(2) = e^2 + 2e^2 = 3e^2$$

So tangent line is

$$\boxed{y - 2e^2 = 3e^2(x-2)}$$