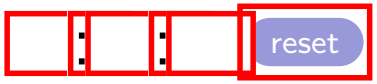
Bellwork 10/17

Find the equation of the tangent line to $f(x) = x^3 + x^2 e^x$ at $x = -1$.

Recall: $(uv)' = uv' + vu'$



Bellwork 10/17 - Solution

$$f'(x) = 3x^2 + 2xe^x + x^2e^x$$

Point-Slope Form: $y - f(-1) = f'(-1)(x+1)$

$$y = \left(3 - \frac{2}{e} + \frac{1}{e}\right)(x+1) + \left(-1 + \frac{1}{e}\right)$$

$$\boxed{y = \left(\frac{3e-1}{e}\right)x + 2}$$

Exercise 1

Find $\frac{\mathrm{d}y}{\mathrm{d}x}$:

$$y = \frac{3x^2 + 2}{3x^2 + 4}$$

Exercise 1 - Solution

Exercise 2

Exercise 2 - Solution

Exercise 3

Exercise 3 - Solution