

Checkup3C

Name: _____

- Use the product rule
- Use the quotient rule
- Use the chain rule

1. Evaluate the following derivative using the product rule (Be sure to show all of your work):

$$\frac{d}{dx} x^3 e^x$$

2. Evaluate the following derivative using the quotient rule (Be sure to show all of your work):

$$\frac{d}{dx} \left[\frac{x^3 - 5x^2 + 4x + 3}{x^2 + 9} \right]$$

3. Evaluate the following derivative using the chain rule (Be sure to show all of your work):

a.

$$\frac{d}{dx} \ln(3x^2 + 9x + 4)$$

b.

$$\frac{d}{dx} \sqrt{\tan(3x)}$$