Derivative Practice
For each of the problems below, find the derivative using the rules we know so far. If this can’t be done, explain why.

1. \( y = 7 \cdot 7^x + 3x^3 \)

2. \( f(t) = e^t + t^e \)

3. \( y = (\ln 3)3^t \)

4. \( y = \frac{x^2}{2^x} \)

5. \( y = x^2 + 2^x \)

6. \( y = x^2 \cdot 2^x \)

7. \( y = e^{5+x} \)

8. \( y = e^{5x} \)

9. \( g(x) = e^{(x^5)} \)

10. \( f(z) = (\sqrt{3})^z \)

11. \( y = \sqrt{3x} \)

12. \( y = \sqrt{3+x} \)

13. Find the coordinates of the point where the tangent line to the graph of \( y = 3^x \) at \( x = 0 \) intersects the x-axis.