Class Drill 8: Don’t Forget the Easy Derivative Rules

[1] Let \( f(x) = 7(x^2 + 3x + 5) \).

(A) Find \( f'(x) \), using the Product Rule to deal with the 7 in front.

(B) Start over. Find \( f'(x) \) again, this time using the Constant Multiple Rule to deal with the 7 in front.

[2] Let \( f(x) = \frac{x^2 + 3x + 5}{7} \).

(A) Find \( f'(x) \), using the Quotient Rule to deal with the fraction.

(B) Start over. Find \( f'(x) \) again, but this time do not use the Quotient Rule. Instead, start by rewriting \( f \) as a constant times a term in parentheses. Then use the Constant Multiple rule.
[3] Let \( f(x) = \frac{7}{e^{(6x)}} \).

(A) Find \( f'(x) \), using the Quotient Rule to deal with the fraction. Simplify your answer.

(B) Start over. Find \( f'(x) \) again, but this time do not use the Quotient Rule. Instead, start by rewriting \( f \) as a constant times an exponential function with a negative sign in the exponent. Then use the Constant Multiple rule. Simplify your answer.