Class Drill 26: Is One Given Function an Antiderivative of Another?

(A) Is $F(x) = x^3e^{(x)}$ an antiderivative of $f(x) = 3x^2e^{(x)}$? Explain.

(B) Is $F(x) = \frac{1}{x}$ an antiderivative of $f(x) = \ln(x)$? Explain.

(C) Is $F(x) = (x^2 + 7)^5$ an antiderivative of $f(x) = 10x(x^2 + 7)^4$? Explain.

(D) Is $F(x) = e^{(3x)} + 5$ an antiderivative of $f(x) = e^{(3x)}$? Explain.

(E) Is $F(x) = -0.5e^{(-2x)} + 7$ an antiderivative of $f(x) = e^{(-2x)}$? Explain.

(F) Is $F(x) = 0.5(ln(x))^2 + 7$ an antiderivative of $f(x) = \frac{\ln(x)}{x}$? Explain.