Quiz 5 Practice

Find $f'(x)$ for the following functions (Note: I'm using $f(x)$ instead of $h(x)$, but you should still be able to use the rules)

1. $f(x) = x^3 e^x$

Product

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

2. $f(x) = \dfrac{x^2+5}{2x-e^x}$

$f'(x) = \dfrac{2x(2x-e^x) - (2-e^x)(x^2+5)}{(2x-e^x)^2}$

Quotient

3. $f(x) = \ln(x^2-3x+8)$

$f'(x) = \dfrac{1}{x^2-3x+8} \cdot (2x-3)$

Chain

4. $f(x) = e^x(x^5+1)^6$

Product + Chain

$f'(x) = e^x(x^5+1)^6 + 6(x^5+1)^5 \cdot 5x^4 \cdot e^x$