Problems 16 & 30, Section 5.s

Find the derivatives of $f(x) = 3x^2 \ln(2x)$ and of $g(x) = x^2 \ln(e^{2x} + 1)$.

Well
$$f'(x) = (6x)(\ln(2x)) + (3x^2)\frac{2}{2x} = 6x(\ln(2x)) + 3x.$$

And
$$g'(x) = 2x(\ln(e^{2x} + 1)) + x^2\frac{2e^{2t}}{e^{2t} + 1}.$$