CALCULUS Logarithmic differentiation NEVV

O400-1. Using logarithmic differentiation, differentiate
$$z = \frac{(3x^2 - 7x + 5)^6(2x^3 - 1)^9}{(x^8 + 1)^2(4 + \cos x)^6}.$$

0400-2. Differentiate
$$z = s^{-4s}$$
.

0400-3. Differentiate
$$S(q) = (4 + q^2)^{q^2 - \sqrt{2}}$$