1. (3 points) Determine a formula for an exponential function given that its graph goes through the points (8, 324), (0, 4) and (6, 108).
2. (3 points) Solve for $x$ in the equation below.

$$x = e^{\ln (32x^2) - \ln (8x^3)}$$

3. (3 points) Given that $g(x) = 1 - e^{x^2} + 3e^x$, find a formula for $g^{-1}(x)$.

4. (1 point) Suppose that $g$ is a function which takes on the following values.

$$g(-10) = 8, \ g(-2) = 3, \ g(-1) = 1/3, \ g(6) = -1/3, \ g(1) = 3, \ g(-3) = -4, \ g(3) = 8$$

Is $g$ a one-to-one function?