9 The functions f and g are defined as follows, for all real values of x.

$$f(x) = 2x^2 - 1$$
$$g(x) = e^x + 1$$

(a) Solve the equation $fg(x) = 8$. [3]

(b) For each of the functions f and g, either explain why the inverse function does not exist or find the inverse function, stating its domain. [4]