

8 Functions f and g are defined as follows:

$$f : x \mapsto x^2 - 1 \text{ for } x < 0,$$

$$g : x \mapsto \frac{1}{2x+1} \text{ for } x < -\frac{1}{2}.$$

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

[4]

[illegible]

(b) Find an expression for $(fg)^{-1}(x)$. [3]

[3]