1. The functions f and g are defined by $f(x) = \frac{2x+1}{5}$ and $g(x) = 5x - 3$.

   (a) Show that $(f \circ g)(x) = 2x - 1$.   (2 marks)

   (b) Given that $(f \circ g)^{-1}(c) = 8$, find the value of c.   (3 marks)

Mark scheme:

   (a) $\frac{2(5x-3)+1}{5}$ (M1)

   $= \frac{10x - 6 + 1}{5}$

   $= \frac{10x - 5}{5}$ (A1)

   $= 2x - 1$ (AG)

   (b) Attempt to substitute in 8 (seen anywhere).   (M1)

   Correct equation: $c = 2(8) - 1$ (A1)

   $c = 15$ (A1)