1. Let $f(x) = 2\sqrt{3x+1}$ for $x \geq 0$ and $g(x) = 4x - 5$ for $x \in \mathbb{R}$.

(a) Write down $f(5)$ (1 mark)

(b) Find $g \circ f\ (5)$ (2 marks)

(c) Find $g^{-1}(x)$ (3 marks)

Mark scheme:

(a) $f(5) = 8$ (A1)

(b) $g \circ f\ (5) = 4(8) - 5$ (M1)
$g \circ f\ (5) = 27$ (A1)

(c) $x = 4y - 5$ (M1) Switching x and y
$x + 5 = 4y$ (A1) Evidence of correct manipulating
$g^{-1}(x) = \frac{x+5}{4}$ (A1)