6 **(a)** The curve $y = a\sin bx + c$ has a period of 180°, an amplitude of 20 and passes through the point (90°, −3). Find the value of each of the constants a, b and c. [3]

(b) The function g is defined, for $-135° \leqslant x \leqslant 135°$, by $g(x) = 3\tan\frac{x}{2} - 4$. Sketch the graph of $y = g(x)$ on the axes below, stating the coordinates of the point where the graph crosses the y-axis. [2]

