**8** The function f is defined by $\mathrm{f}(x) = 3\sin^2 x - 2\cos x$ for $2 \leqslant x \leqslant 4$, where $x$ is in radians.

**(a)** Find the $x$-coordinate of the stationary point on the curve $y = \mathrm{f}(x)$. [5]

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**(b)** Solve the equation $f(x) = 1 - 3\cos x$. [5]