2 **(a)** Given that $256^{x+y} \times 16^{-2x} = 8^{-x+3y}$, show that $y = 3x$. [2]

(b) Hence find the exact solutions of the following simultaneous equations.

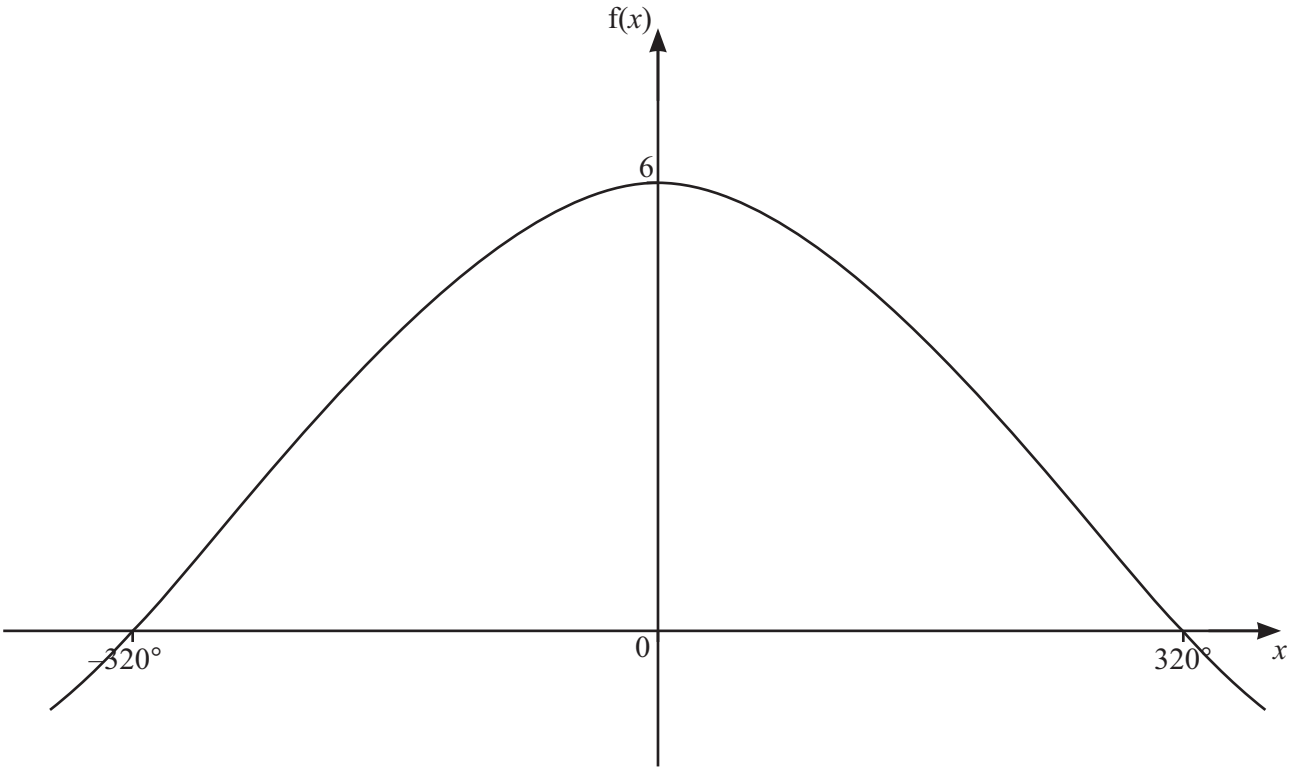
$$256^{x+y} \times 16^{-2x} = 8^{-x+3y}$$

$$x^2 + 3y^2 = 56$$

[3]

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3



The diagram shows part of the graph of $f(x) = a\cos bx + c$, where a, b and c are constants. Given that $f(x)$ has a period of 960°, find the values of a, b and c. [4]

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