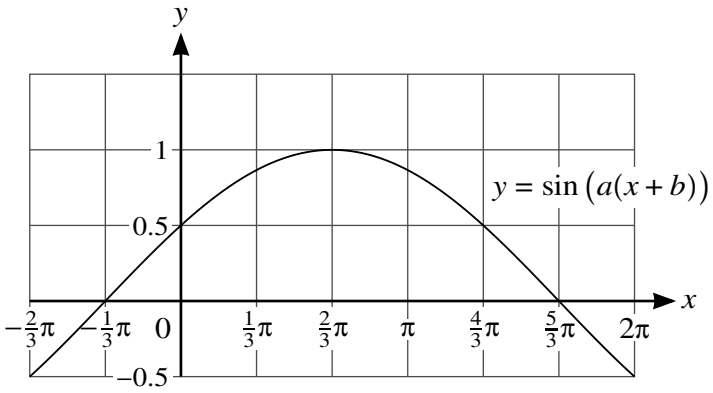
8



The diagram shows part of the graph of $y = \sin\big(a(x + b)\big)$, where a and b are positive constants.

(a) State the value of a and one possible value of b. [2]

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Another curve, with equation $y = \mathrm{f}(x)$, has a single stationary point at the point (p, q), where p and q are constants. This curve is transformed to a curve with equation

$$y = -3\mathrm{f}\big(\tfrac{1}{4}(x + 8)\big).$$

(b) For the transformed curve, find the coordinates of the stationary point, giving your answer in terms of p and q. [3]

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