Higher Maths
SQA 2021 Paper 2
Question 5

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(a) Express $3\cos t° + 5\sin t°$ in the form $k\sin(t+a)°$, $k > 0$, $0 < a < 360$. 4

(b) A function, f, is defined by $f(t) = 3\cos t° + 5\sin t°$, $0 \leq t < 360$.

(i) State the minimum value of $f(t)$. 1

(ii) Determine the value of t where this minimum occurs. 1

Answers:

(a) $\sqrt{34}\sin(t + 30{\cdot}96...)°$

(b) (i) $-\sqrt{34}$

(ii) $239{\cdot}0...$