

Higher Maths
SQA 2018 Paper 2
Question 8



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- (a) Express $2\cos x^\circ - \sin x^\circ$ in the form $k\cos(x-a)^\circ$, $k > 0$, $0 < a < 360$. 4
- (b) Hence, or otherwise, find
- (i) the minimum value of $6\cos x^\circ - 3\sin x^\circ$ and 1
- (ii) the value of x for which it occurs where $0 \leq x < 360$. 2
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Answers:

- (a) $\sqrt{5}\cos(x - 333.4\dots)^\circ$
- (b) (i) $-3\sqrt{5}$ or $-\sqrt{45}$
- (ii) $x = 153.4\dots$