

Higher Maths
SQA 2017 Paper 1
Question 14



(a) Express $\sqrt{3} \sin x^\circ - \cos x^\circ$ in the form $k \sin(x - a)^\circ$,
where $k > 0$ and $0 < a < 360$. 4

(b) Hence, or otherwise, sketch the graph with equation
 $y = \sqrt{3} \sin x^\circ - \cos x^\circ$, $0 \leq x \leq 360$. 3

Use the diagram provided in the answer booklet.

Answers:

(a) $2 \sin(x - 30)^\circ$

- (b) The graph should feature:
- roots 30 and 210
 - turning points (120, 2) and (300, -2)
 - y-intercept -1
 - the point (360, -1).