Higher Maths
SQA 2018 Specimen
Paper 2 Question 8

## Higher Maths

 Maths.scot(a) Express $5 \cos x-2 \sin x$ in the form $k \cos (x+a)$, where $k>0$ and $0<a<2 \pi$.
(b) The diagram shows a sketch of part of the graph of $y=10+5 \cos x-2 \sin x$ and the line with equation $y=12$.
The line cuts the curve at the points P and Q .


Find the $x$-coordinates of P and Q .

Answers:
(a) $\sqrt{29} \cos (x+0 \cdot 38)$
(b) $\quad x_{P}=0.8097 \ldots$

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x_{Q}=4.712 \ldots
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