



2018 P2 Q8

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

Answers

(a) $\sqrt{5}\cos(x - 333.4 \dots)^\circ$

(b) (i) $-3\sqrt{5}$ or $-\sqrt{45}$

(ii) $x = 153.4 \dots$