14. **In this question you must show all stages of your working.**

Solutions relying on calculator technology are not acceptable.

(a) Show that

$$\sin(x + 30°) + \sqrt{3}\cos(x + 30°) \equiv 2\cos x$$

(3)

(b) Hence solve, for $0 \leqslant \theta < 180°$

$$\sin(\theta + 30°) + \sqrt{3}\cos(\theta + 30°) = 3\sin 2\theta$$

giving your answers to one decimal place, where appropriate.

(4)