

3. (a) Express $4 \sin x + 5 \cos x$ in the form $k \sin(x + a)$ where $k > 0$ and $0 < a < 2\pi$. **4**

(b) Hence solve $4 \sin x + 5 \cos x = 5.5$ for $0 \leq x < 2\pi$. **3**