7 **(a)** Express $5\sin\left(x+\frac{1}{6}\pi\right)-4\cos x$ in the form $R\sin(x-\alpha)$, where $R>0$ and $0<\alpha<\frac{1}{2}\pi$. State the exact value of R and give the value of α correct to 3 decimal places. [4]

(b) Hence solve the equation $5\sin\left(2\theta+\frac{1}{6}\pi\right)-4\cos 2\theta=\sqrt{7}$ for $0\leqslant\theta\leqslant\pi$. Give your answers correct to 2 decimal places. [4]