7 **(a)** Use the result $\cos(A+B) = \cos A \cos B - \sin A \sin B$ to show that

$\cos(A-B) = \cos A \cos B + \sin A \sin B$. **[2]**

The function $f(\theta)$ is defined as $\cos(\theta+30°)\cos(\theta-30°)$, where θ is in degrees.

(b) Show that $f(\theta) = \cos^2\theta - \frac{1}{4}$. **[3]**

(c) **(i)** Determine the following.

- The **maximum** value of $f(\theta)$
- The smallest **positive** value of θ for which this maximum value occurs **[2]**

(ii) Determine the following.

- The **minimum** value of $f(\theta)$
- The smallest **positive** value of θ for which this minimum value occurs **[2]**