2. (a) Use de Moivre's theorem to show that

$$\cos^5\theta = \frac{1}{16}(\cos 5\theta + 5\cos 3\theta + 10\cos\theta)$$

(5)

(b) Hence solve, for $\pi < \theta < 2\pi$, the equation

$$\cos\theta - \cos 5\theta = 5\cos 3\theta$$

(5)