

4. The instantaneous current and voltage in an electric circuit are given by

$$i = I \cos 50\pi t$$

$$v = V \cos(50\pi t + \pi/6)$$

Determine an expression for the instantaneous power in the circuit, $p = iv$, as the sum of two cosines.

If I is 3 mA and V is 5 V, calculate the maximum value of p , giving your answer in watts correct to three significant figures, and the first positive value of t at which it occurs.
