Chapter 11, Solution 45.

(a) $V^2_{rms} = 20^2 + \frac{60^2}{2} = 2200 \longrightarrow V_{rms} = \underline{46.9\,\text{V}}$

$$I_{rms} = \sqrt{1^2 + \frac{0.5^2}{2}} = \sqrt{1.125} = \underline{1.061A}$$

(b) p(t) = v(t)i(t) = 20 + 60cos100t – 10sin100t – 30(sin100t)(cos100t); clearly the average power = **20W**.