Chapter 9, Solution 30.

Since R and C are in parallel, they have the same voltage across them. For the resistor,

$$V = I_R R \quad \longrightarrow \quad I_R = V / R = \frac{100 < 20^o}{40k} = 2.5 < 20^o \text{ mA}$$

$$i_R = \underline{2.5\cos(60t + 20^o) \text{ mA}}$$

For the capacitor,

$$i_C = C\frac{dv}{dt} = 50x10^{-6}(-60)x100\sin(60t + 20^o) = \underline{-300\sin(60t + 20^o) \text{ mA}}$$