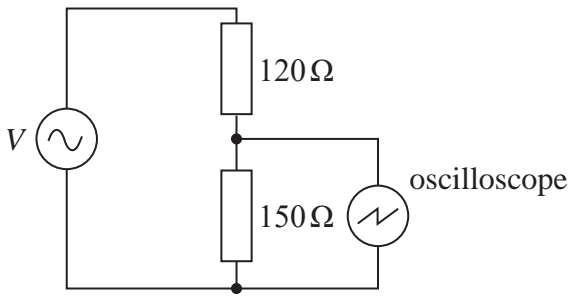
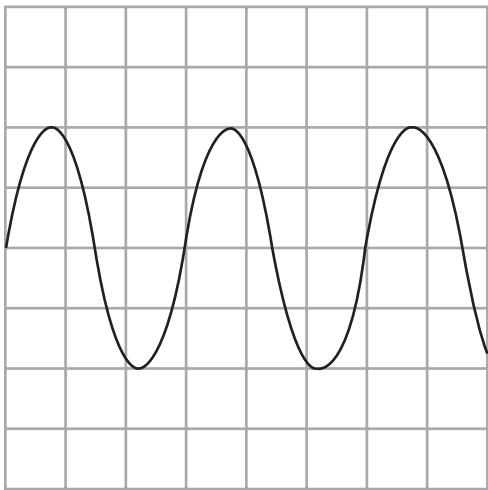


7 A student connected the output from a source of alternating potential difference (p.d.) to a series resistor combination.

She connected an oscilloscope across the  $150\,\Omega$  resistor as shown.



(a) The trace obtained on the oscilloscope is shown below.



(i) Determine the peak p.d. across the  $150\,\Omega$  resistor.

y-sensitivity of oscilloscope =  $2.0\text{ V}$  per division (2)

Peak p.d. across  $150\,\Omega$  resistor = .....

(ii) Calculate the root mean square (r.m.s.) value of the current in the circuit.

(3)

r.m.s. value of current = .....

(iii) Calculate the power dissipated in the circuit.

(3)

Power dissipated in circuit = .....

(b) Another student suggested that a voltmeter would be more accurate than using an oscilloscope to determine the magnitude of the p.d.

Comment on this suggestion. (3)