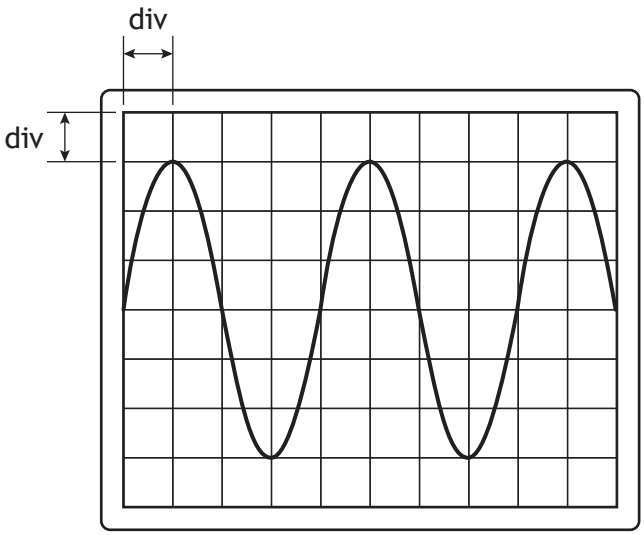
13. A student connects a signal generator, which provides an alternating current, to an oscilloscope.

(a) State what is meant by an *alternating current*. **1**

(b) The oscilloscope screen shows the output of the signal generator.



The Y-gain setting on the oscilloscope is 5·0 V/div.

The timebase setting on the oscilloscope is 1·0 ms/div.

(i) Determine the peak voltage of the output of the signal generator. **1**

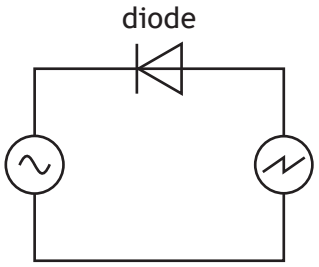
Space for working and answer

13. (b) (continued)

(ii) Determine the frequency of the output of the signal generator. **3**

Space for working and answer

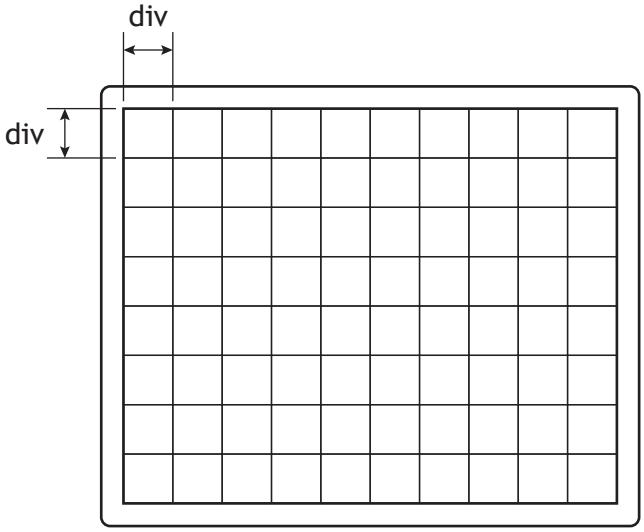
(c) The student connects a diode to the circuit as shown. The settings on the signal generator and the oscilloscope are unchanged.



Current can only flow in one direction through a diode.

This changes the trace on the oscilloscope screen.

On the diagram below, draw the new trace seen on the oscilloscope screen. **2**



(An additional diagram, if required can be found on *page 45*.)