

Physics
UNIT: 4PH1
PAPER: 2PR

Friday 14 June 2024 – Afternoon

Time: 1 hour 15 minutes

Diagram Booklet

THIS DIAGRAM BOOKLET MUST BE RETURNED WITH THE QUESTION PAPER AT THE END OF THE EXAMINATION.

In the boxes below, write your name, centre number and candidate number.

Surname					
Other names					
Centre Number					
Candidate Number					

INSTRUCTIONS

There may be spare copies of some diagrams in case you need them.

CONTENTS

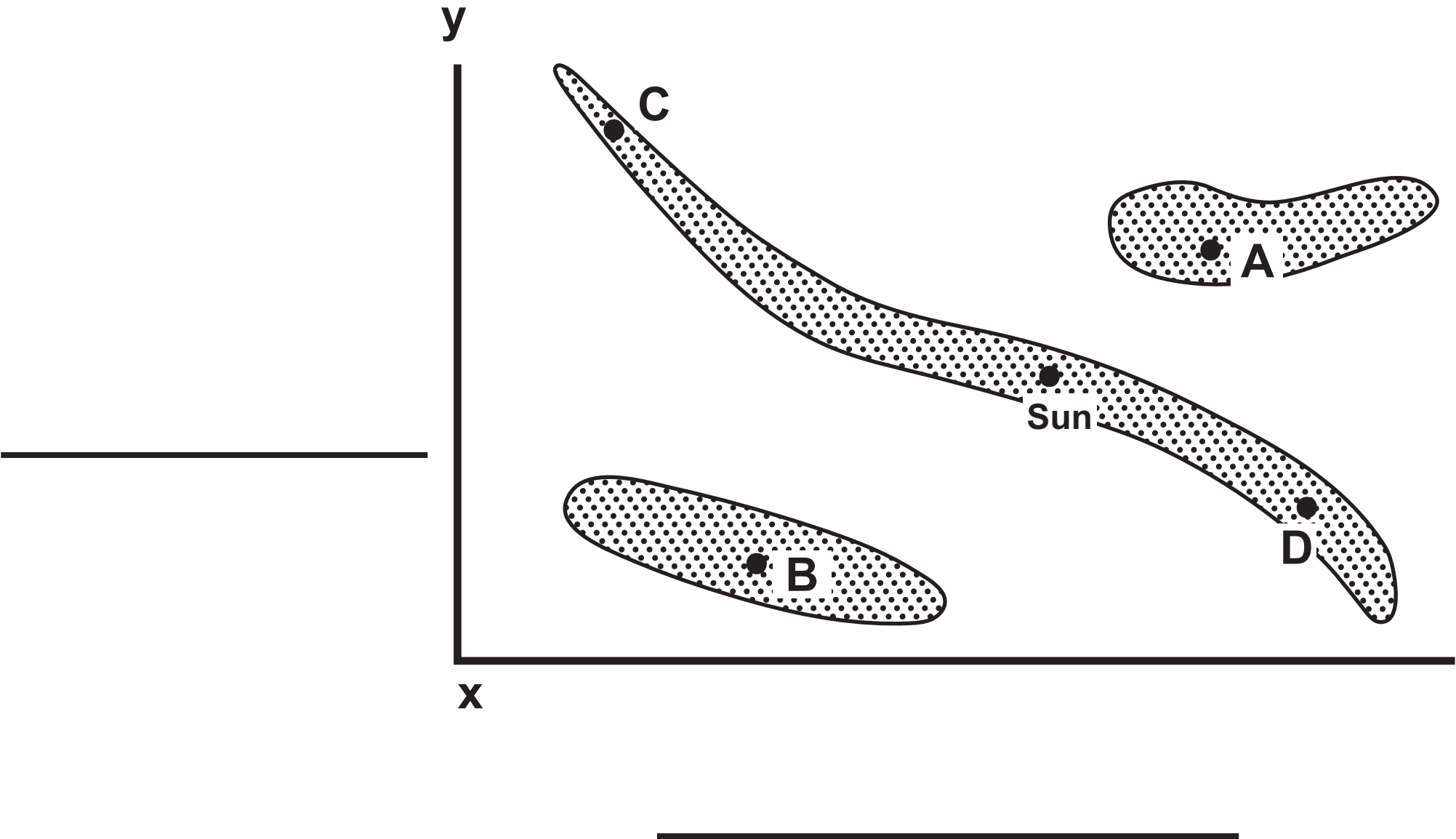
Page

3	Question 1
4	Question 2(a)
5	Question 3(a)
6	Question 3(b)
7	Question 4
8	Question 4(a)
9	Question 5
10–11	Question 6(a)
12	Question 6(b)
13	Question 6(b)(i)
14	Question 7
15	Question 7(b)
16	Question 8
17	Question 9(b)
18	Question 9(c)

Spare Copies

19	Question 2(a)
20	Question 3(a)
21	Question 3(b)
22	Question 4(a)
23	Question 7(b)
24	Question 9(b)

Question 1

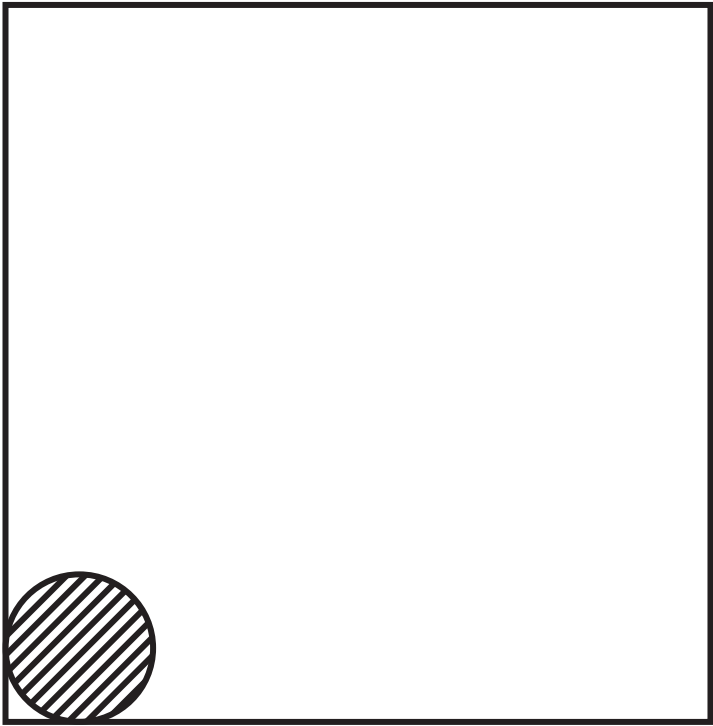


Question 2(a)

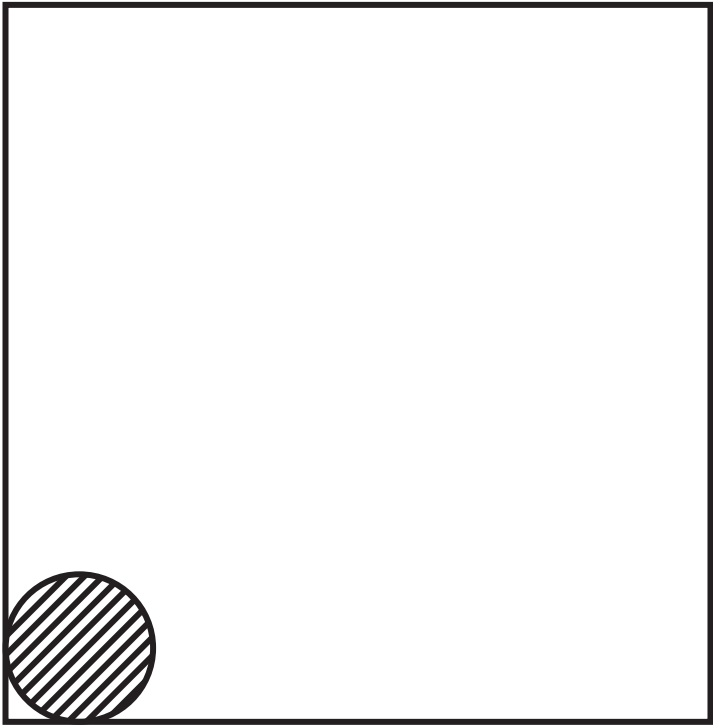
STATEMENT	NUCLEAR FISSION	NUCLEAR FUSION
requires high pressure and high temperature		
energy is released		
radioactive daughter nuclei are produced		

Question 3(a)

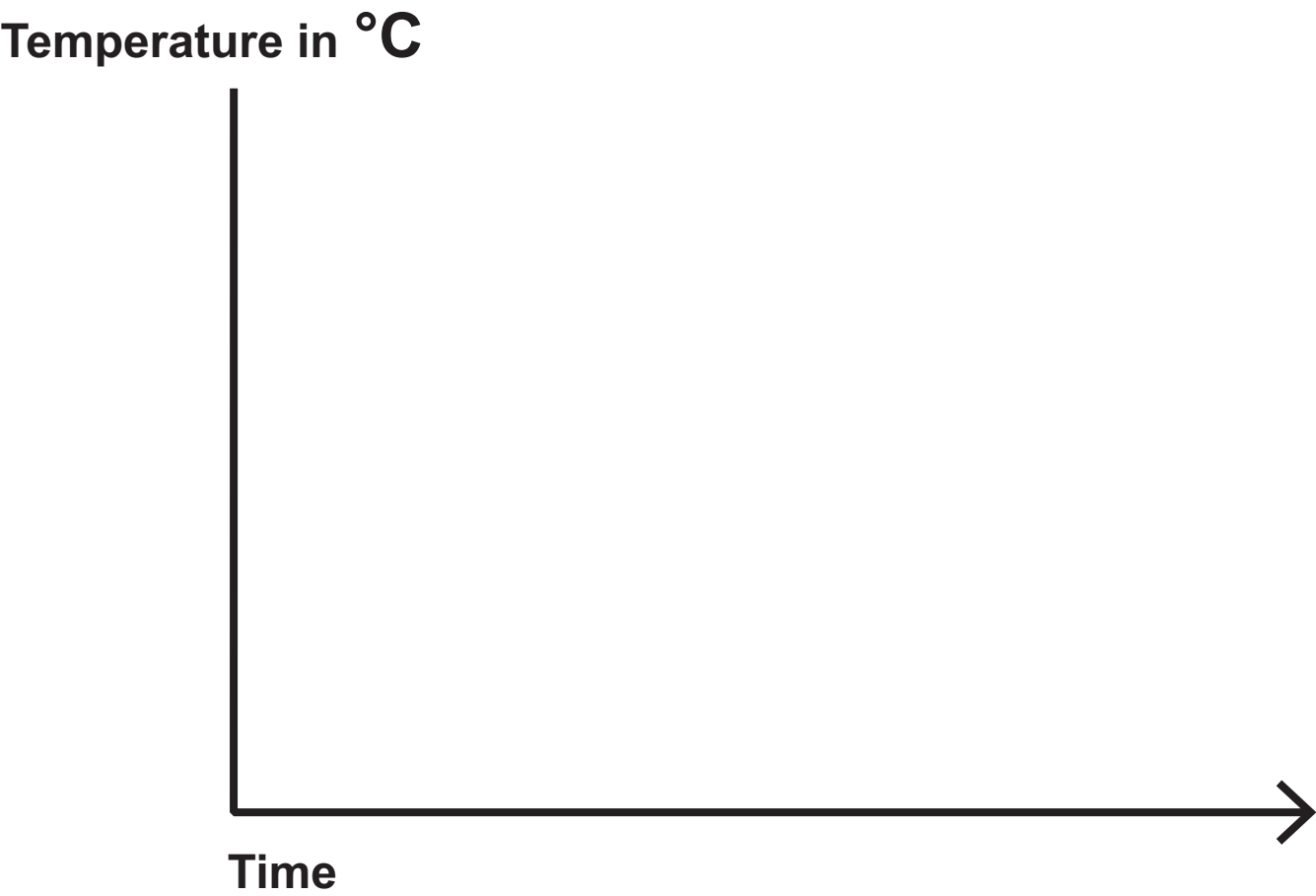
Liquid



Solid



Question 3(b)



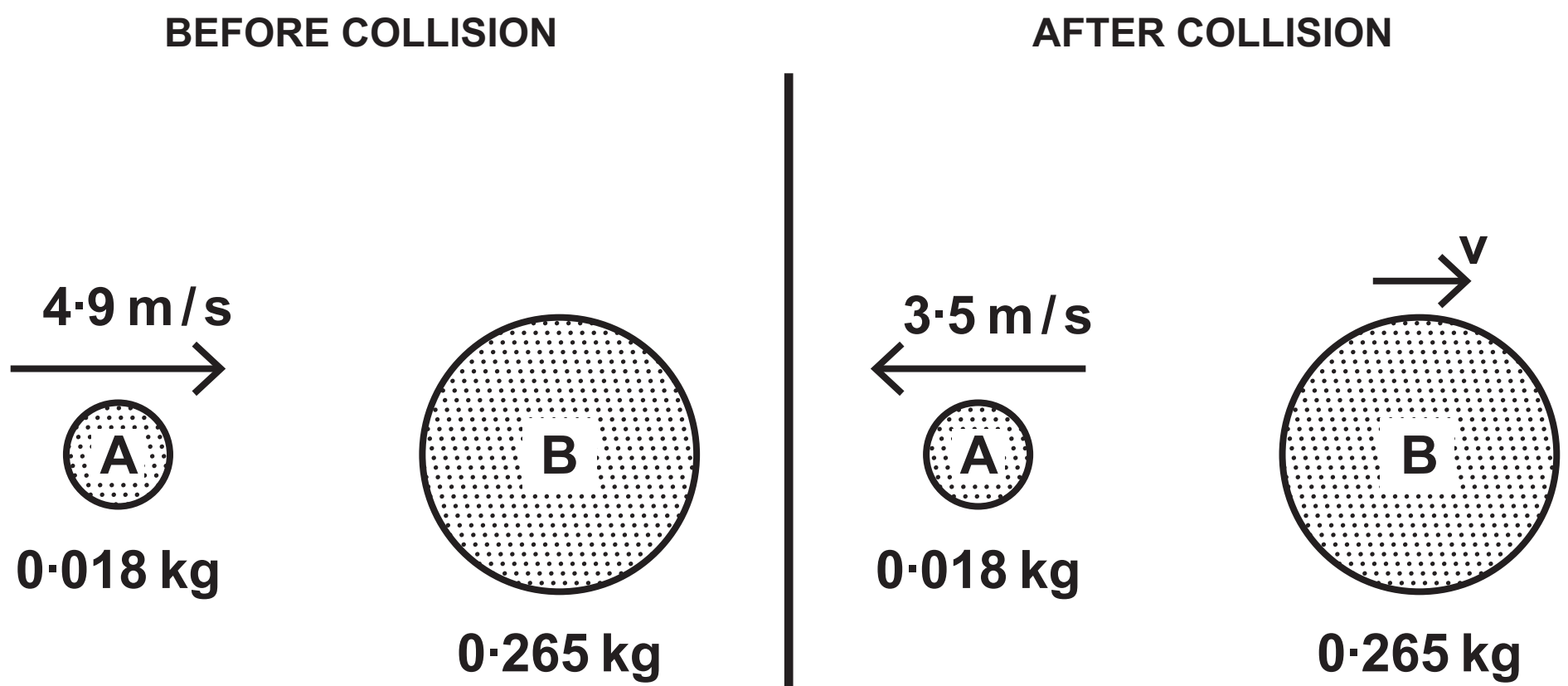
Question 4



Question 4(a)



Question 5



Photograph 1



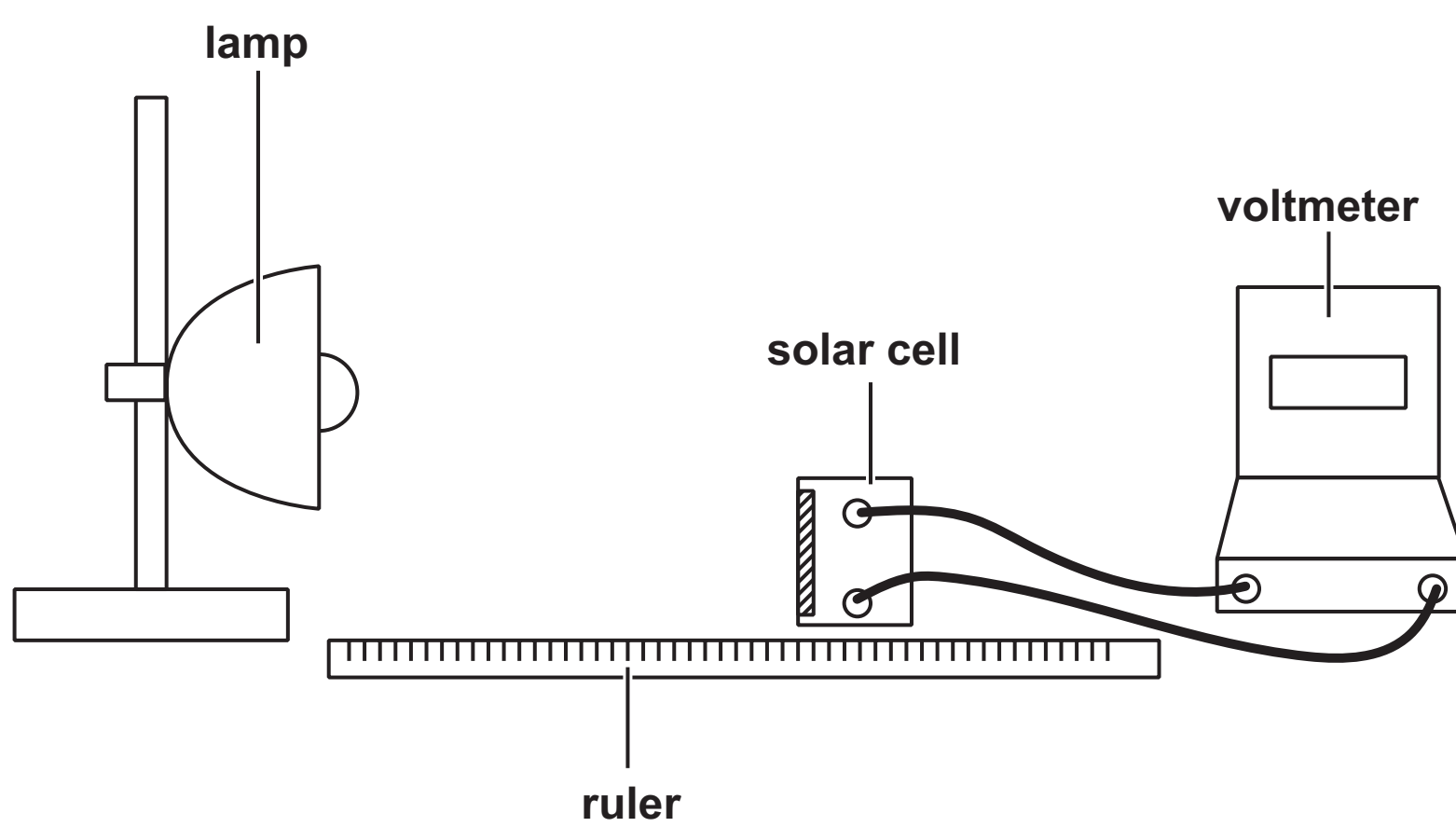
(continued on the next page)

Turn over

Photograph 2

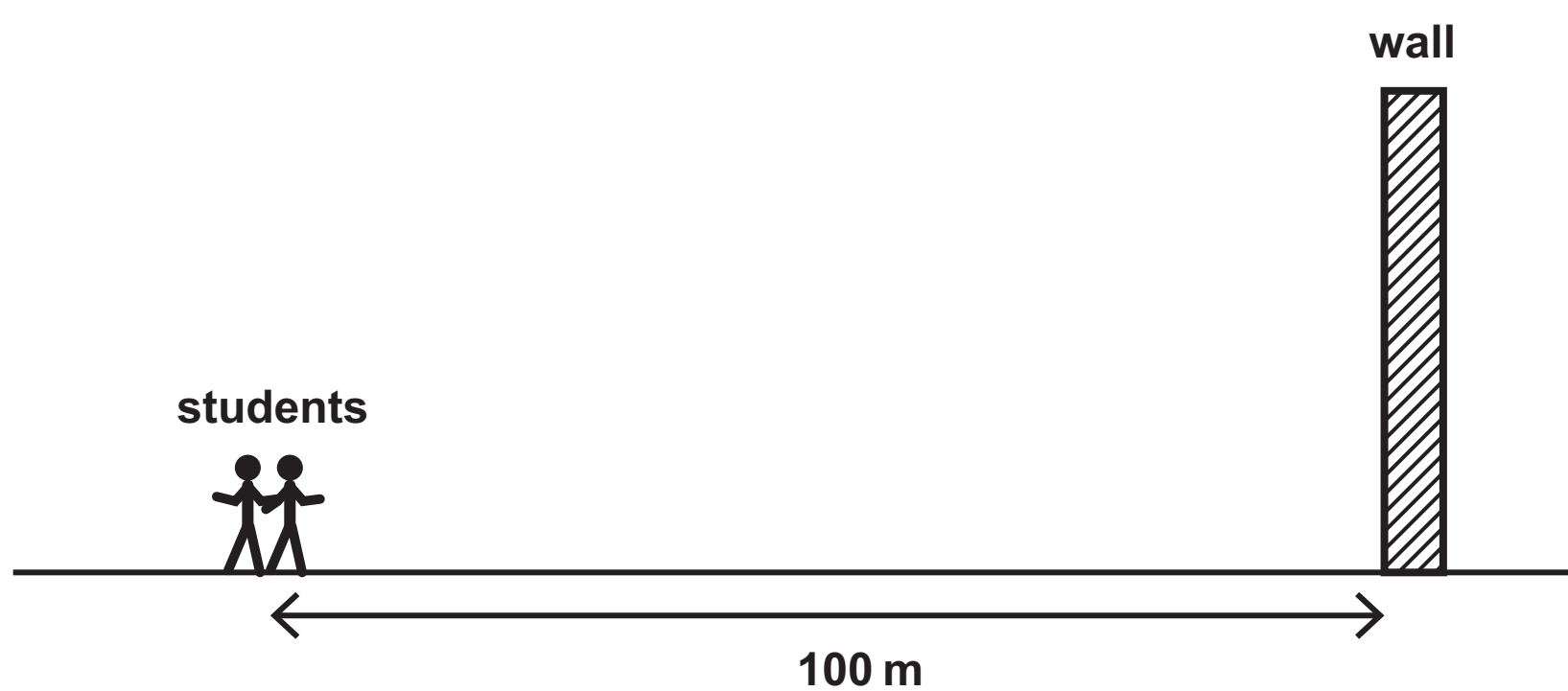


Question 6(b)



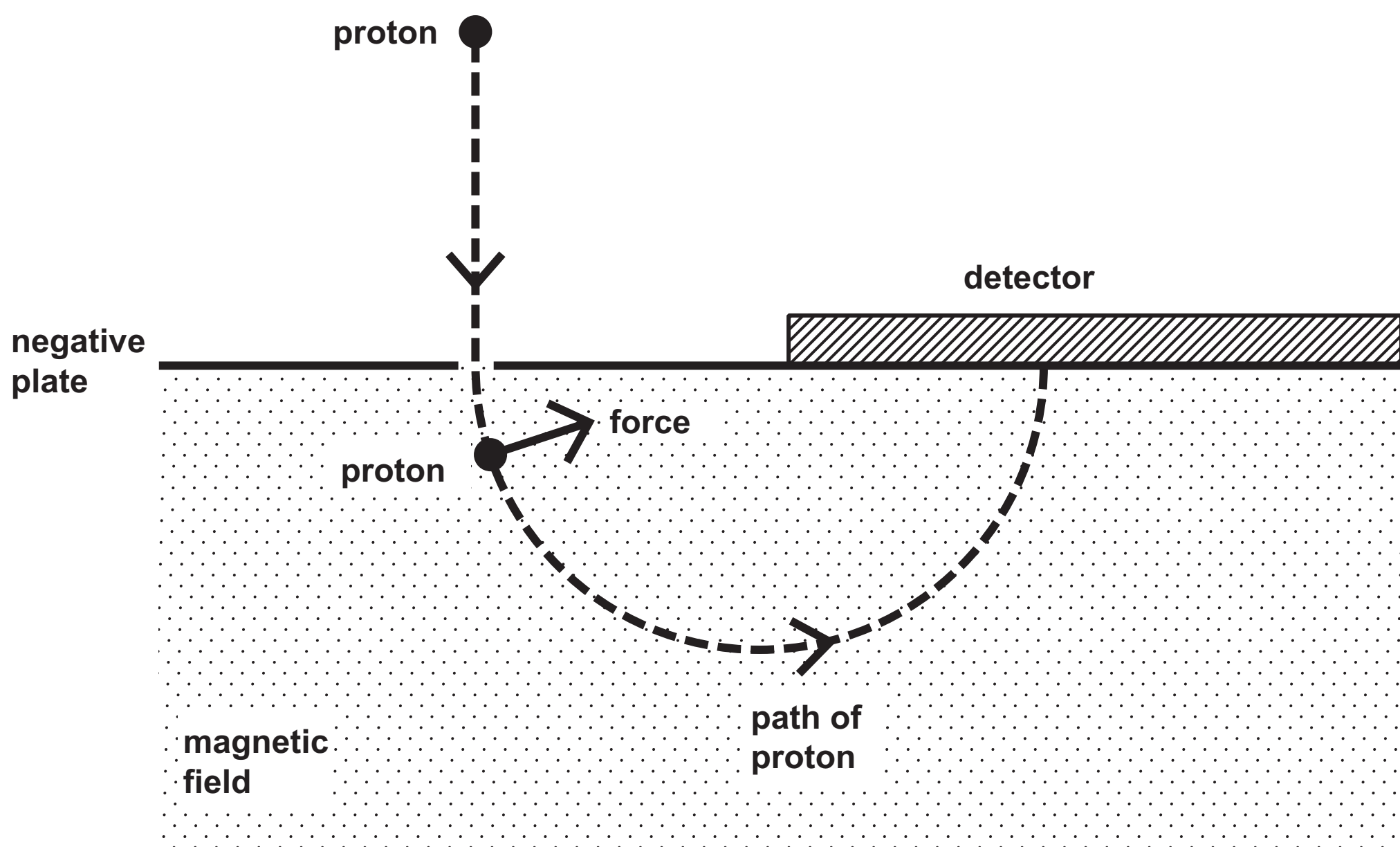
Question 6(b)(i)**5 cm, 0.45 V****14 cm, 0.06 V****8 cm, 0.18 V****17 cm, 0.04 V****11 cm, 0.10 V****20 cm, 0.03 V**

Question 7



Time between starting and stopping timer in seconds					
TEST 1	TEST 2	TEST 3	TEST 4	TEST 5	MEAN
11.80	11.18	11.76	11.75	11.72	

Question 8

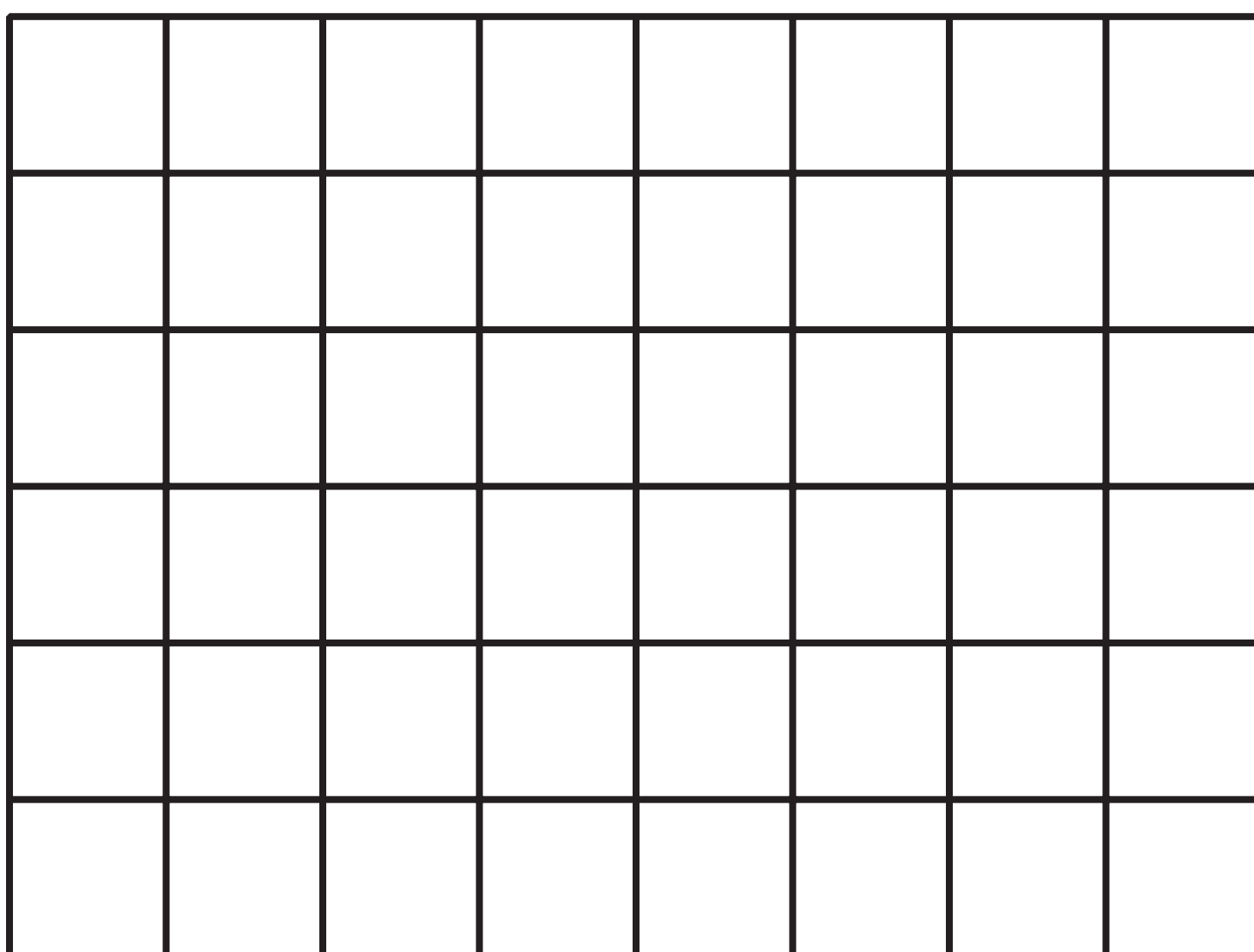


Question 9(b)

oscilloscope settings:

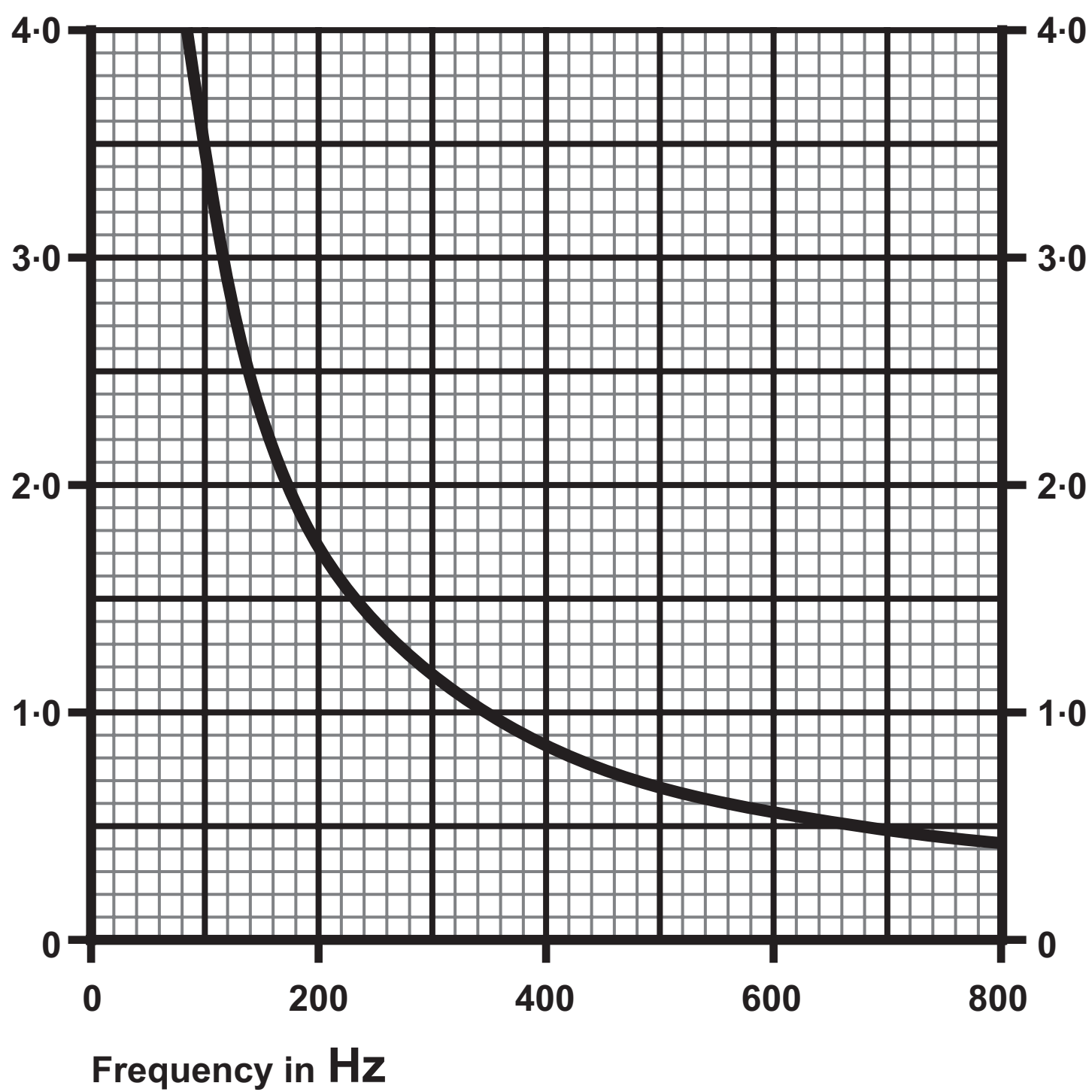
y direction: 1 square = **2 V**

X direction: 1 square = **0.001 s**

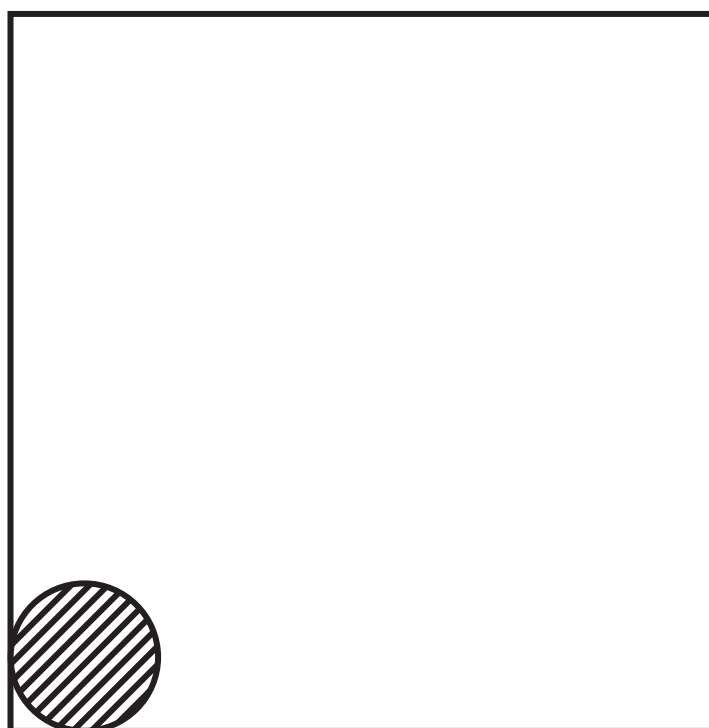
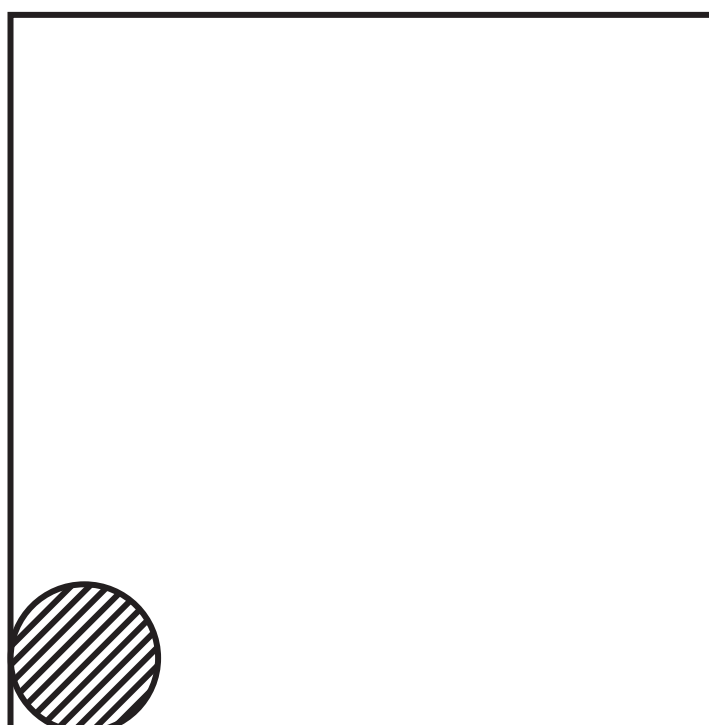


Question 9(c)

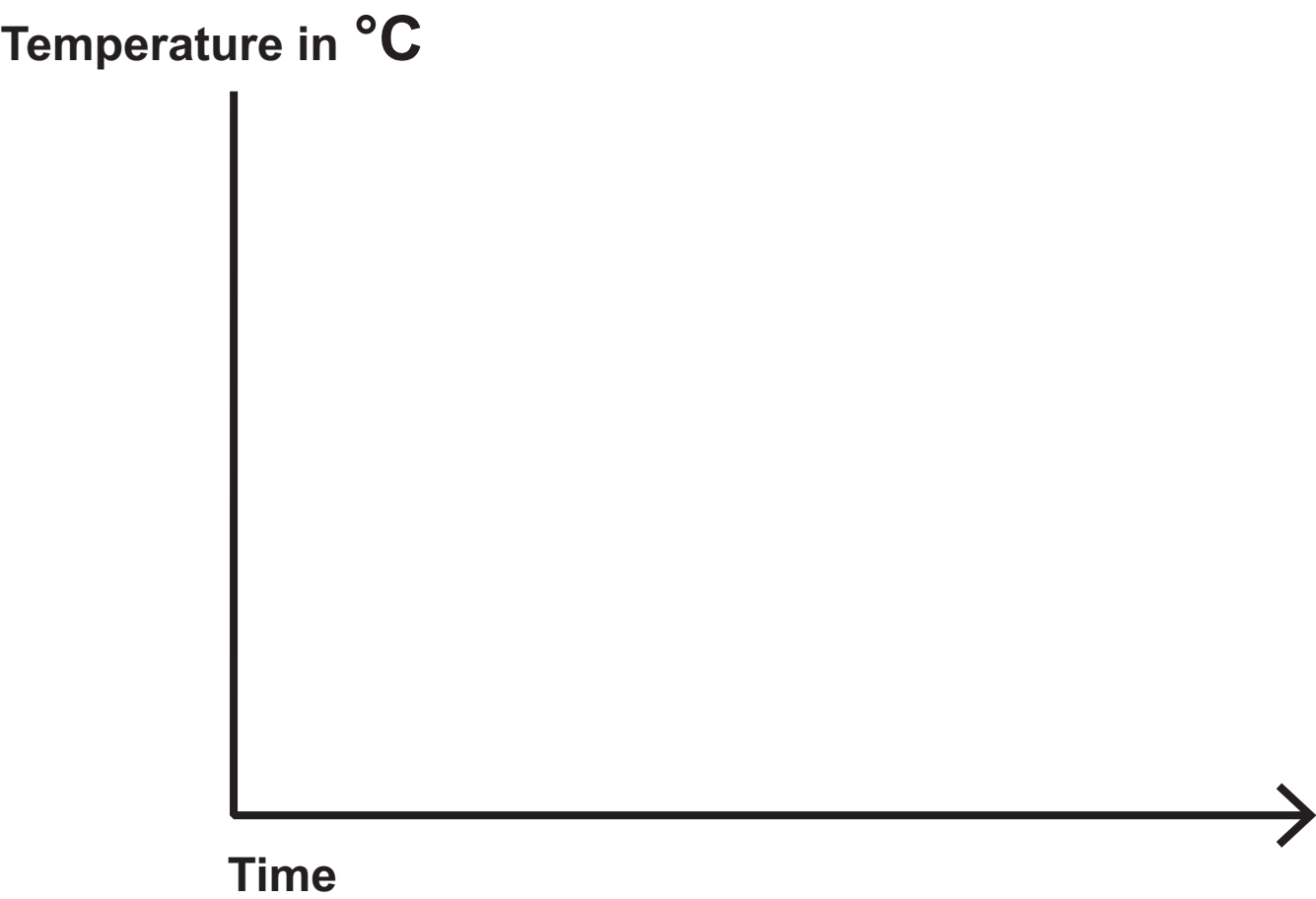
Wavelength in m



STATEMENT	NUCLEAR FISSION	NUCLEAR FUSION
requires high pressure and high temperature		
energy is released		
radioactive daughter nuclei are produced		

Question 3(a)**Liquid****Solid**

Question 3(b)



Question 4(a)



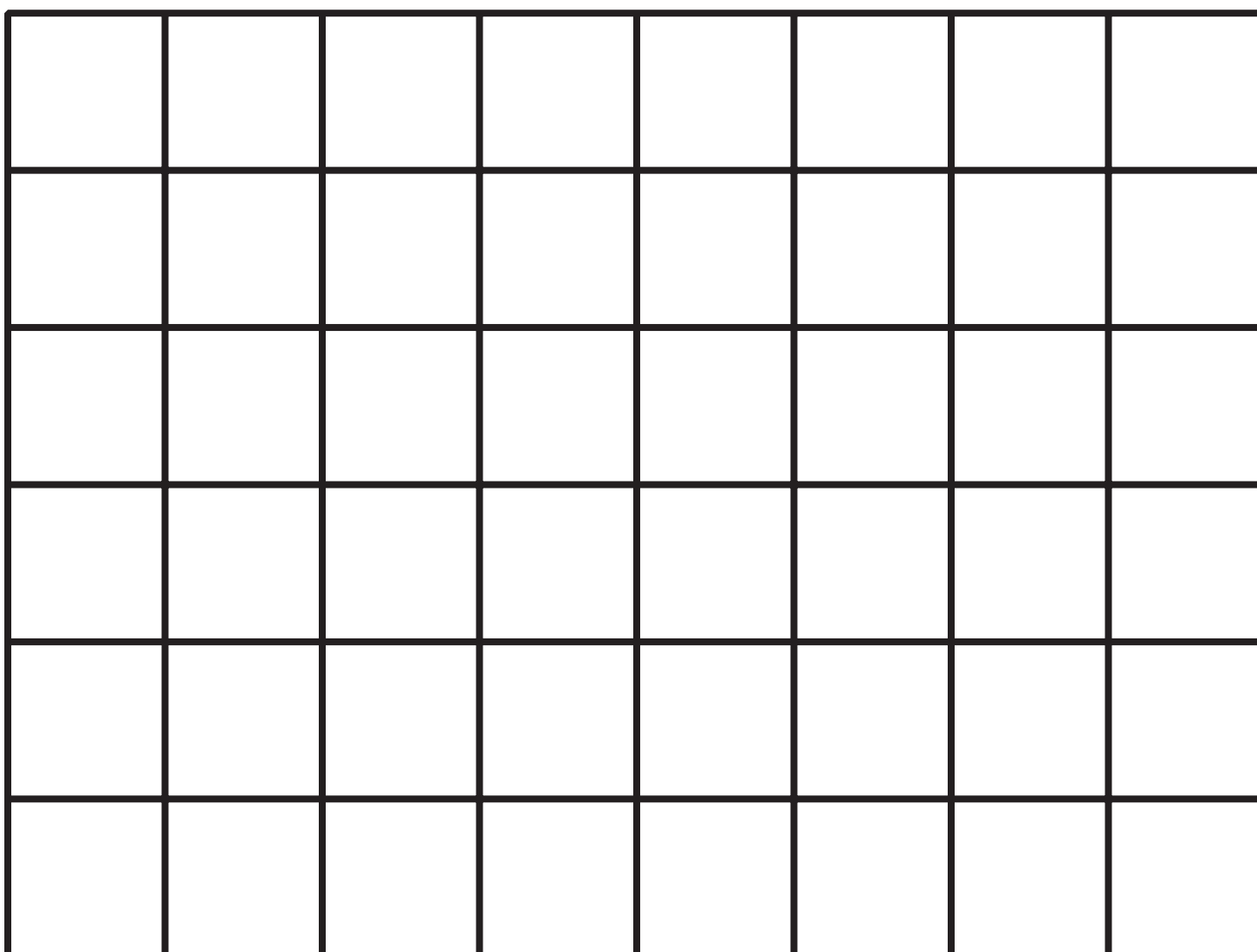
Time between starting and stopping timer in seconds					
TEST 1	TEST 2	TEST 3	TEST 4	TEST 5	MEAN
11.80	11.18	11.76	11.75	11.72	

Question 9(b)

oscilloscope settings:

y direction: 1 square = **2 V**

X direction: 1 square = **0.001 s**



Source information:

Question 4

(Source adapted from: © Paul Maguire / Shutterstock)

Question 6(a)

(Source: © Marcin Jucha / Shutterstock)

(Source: © Javarman / Shutterstock)