

Physics  
PAPER 1  
Higher Tier

Wednesday 22 May 2024 – Morning

Time: 1 hour 45 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**

<b>3</b>	<b>Question 1(c)</b>
<b>4</b>	<b>Question 2</b>
<b>5</b>	<b>Question 2(c)</b>
<b>6</b>	<b>Question 3(a)</b>
<b>7</b>	<b>Question 4(b)</b>
<b>8</b>	<b>Question 4(d)</b>
<b>9</b>	<b>Question 5</b>
<b>10</b>	<b>Question 6(a)(ii)</b>
<b>11</b>	<b>Question 6(b)</b>
<b>12</b>	<b>Question 6(c)</b>
<b>13</b>	<b>Question 7(a)</b>
<b>14</b>	<b>Question 7(c)</b>
<b>15</b>	<b>Question 8(d)(iv)</b>
<b>16</b>	<b>Question 9(a)</b>
<b>17</b>	<b>Question 9(b)</b>
<b>18</b>	<b>Question 9(c)</b>
<b>19</b>	<b>Question 10(b)</b>
<b>20</b>	<b>Question 10(c)</b>

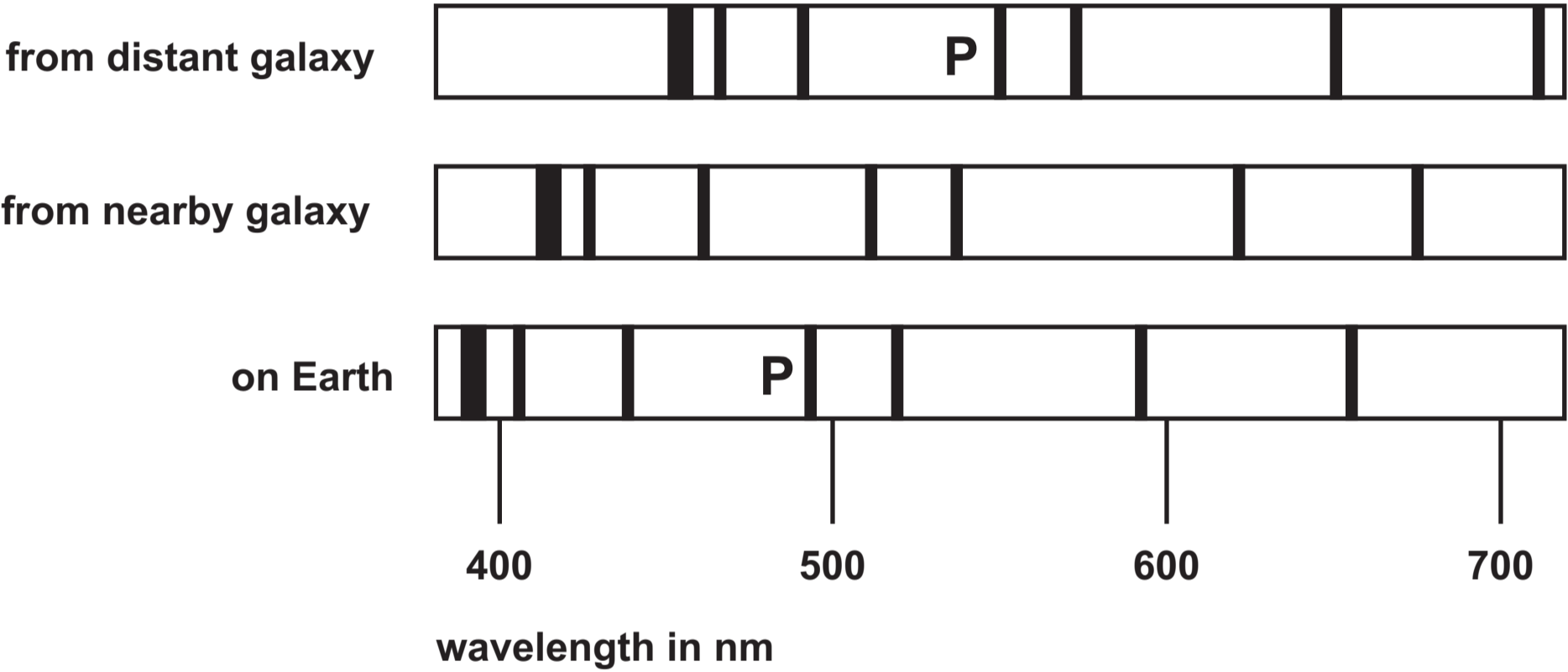
**Spare Copies**

<b>21</b>	<b>Question 8(d)(iv)</b>
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Question 1(c)

FIGURE 1

SPECTRUM OF ELEMENT



## Question 2

FIGURE 2

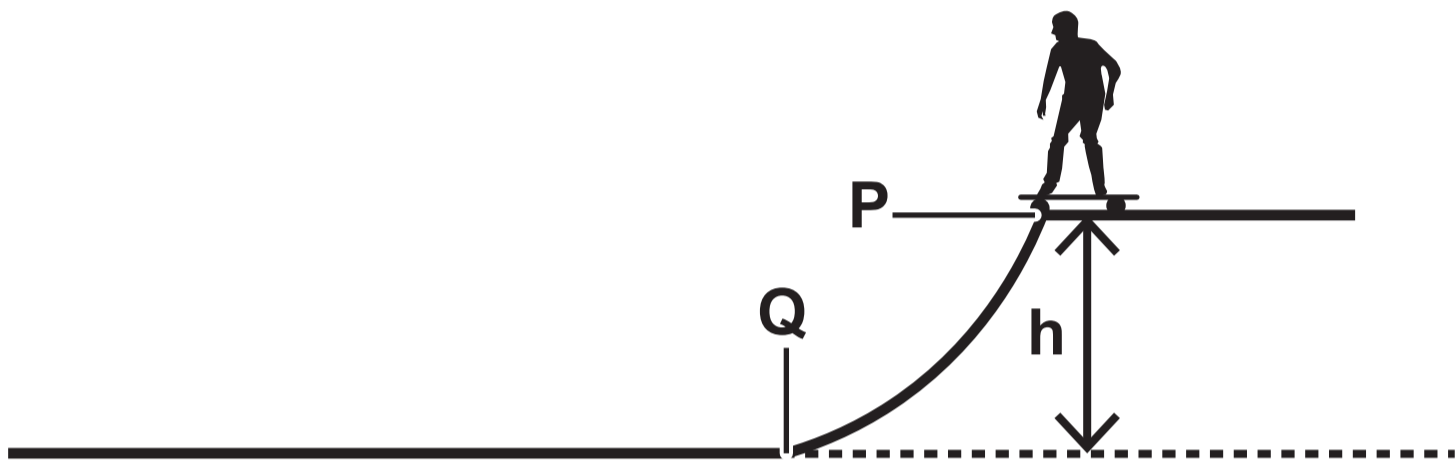
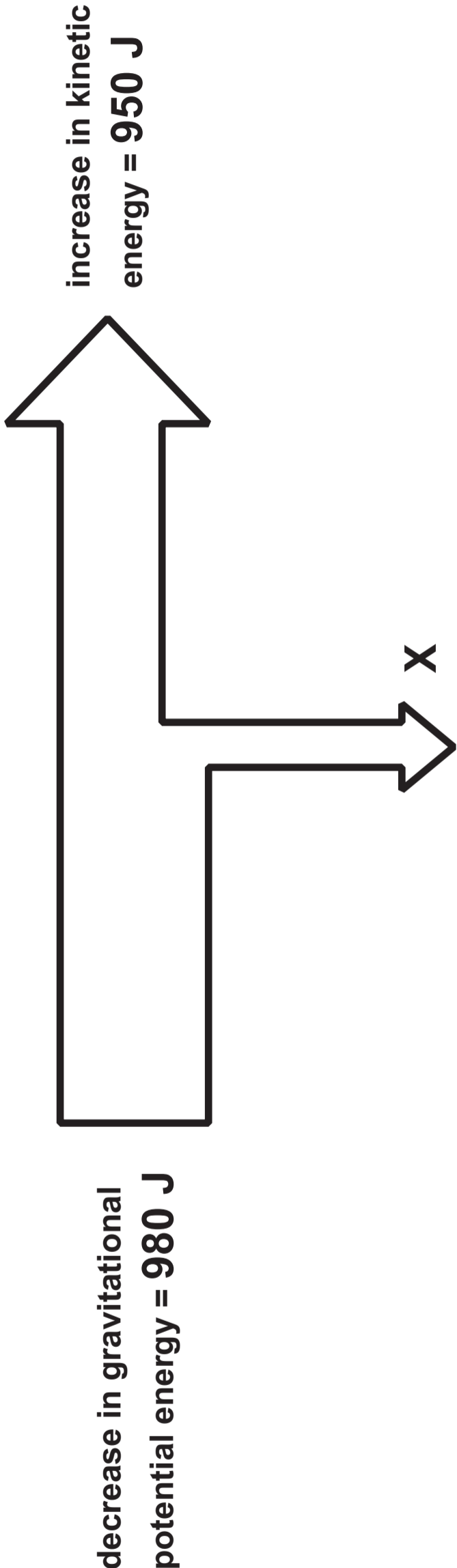


FIGURE 3

NOT TO SCALE



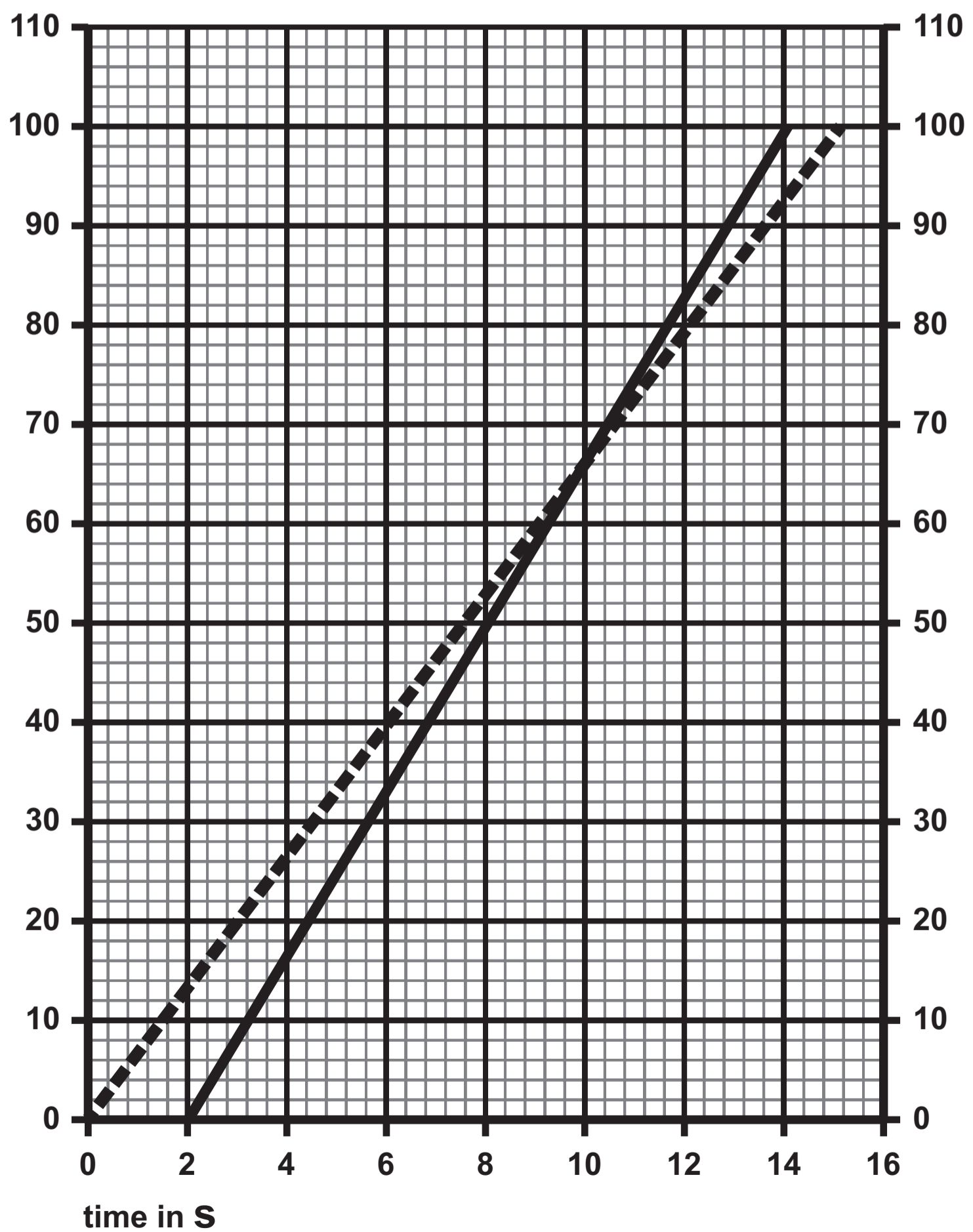
## Question 3(a)

FIGURE 4

KEY

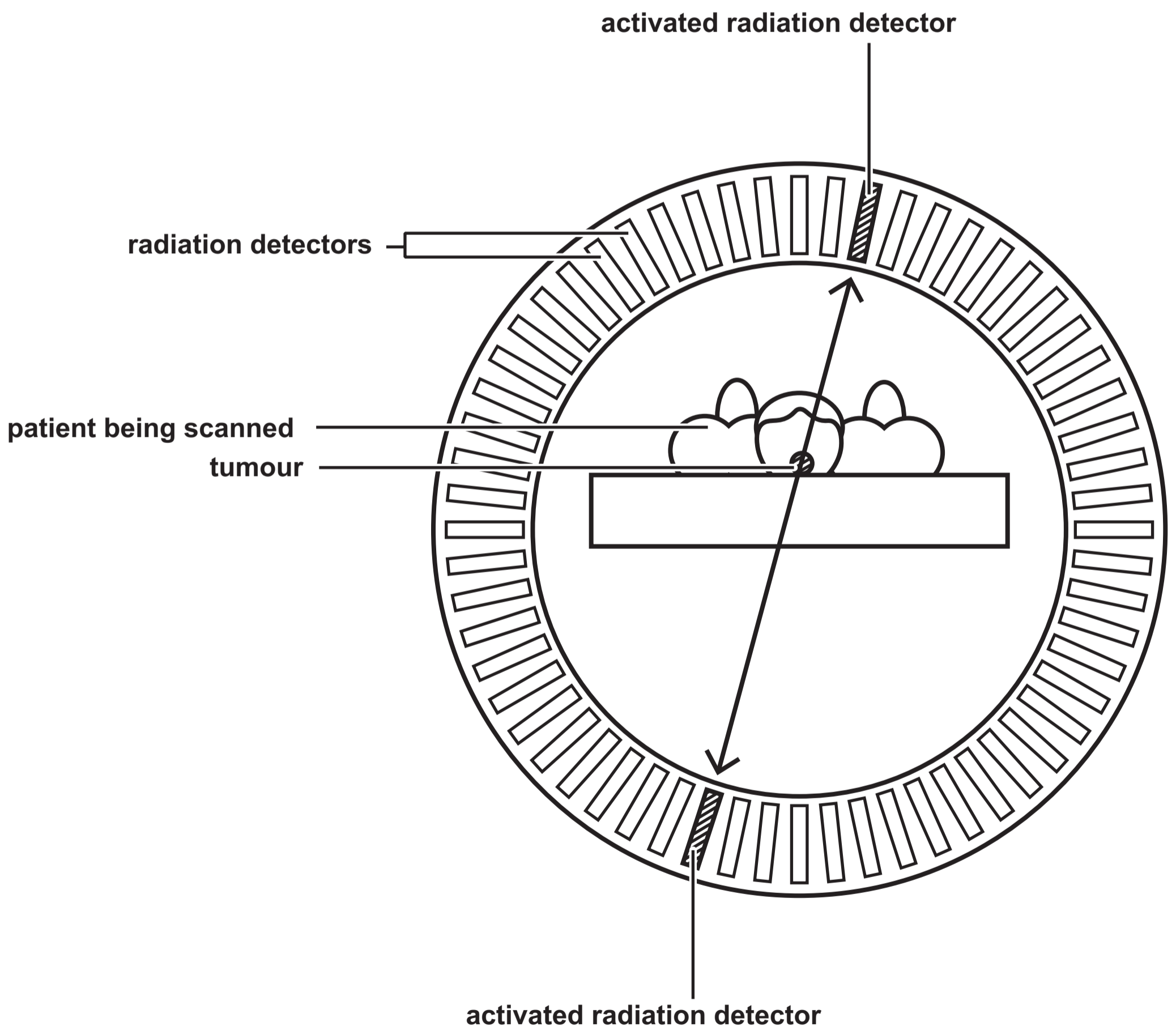
 M L

distance in m



## Question 4(b)

FIGURE 5



Question 4(d)

FIGURE 6

KEY

----- isotope Q

———— isotope P

activity in Bq

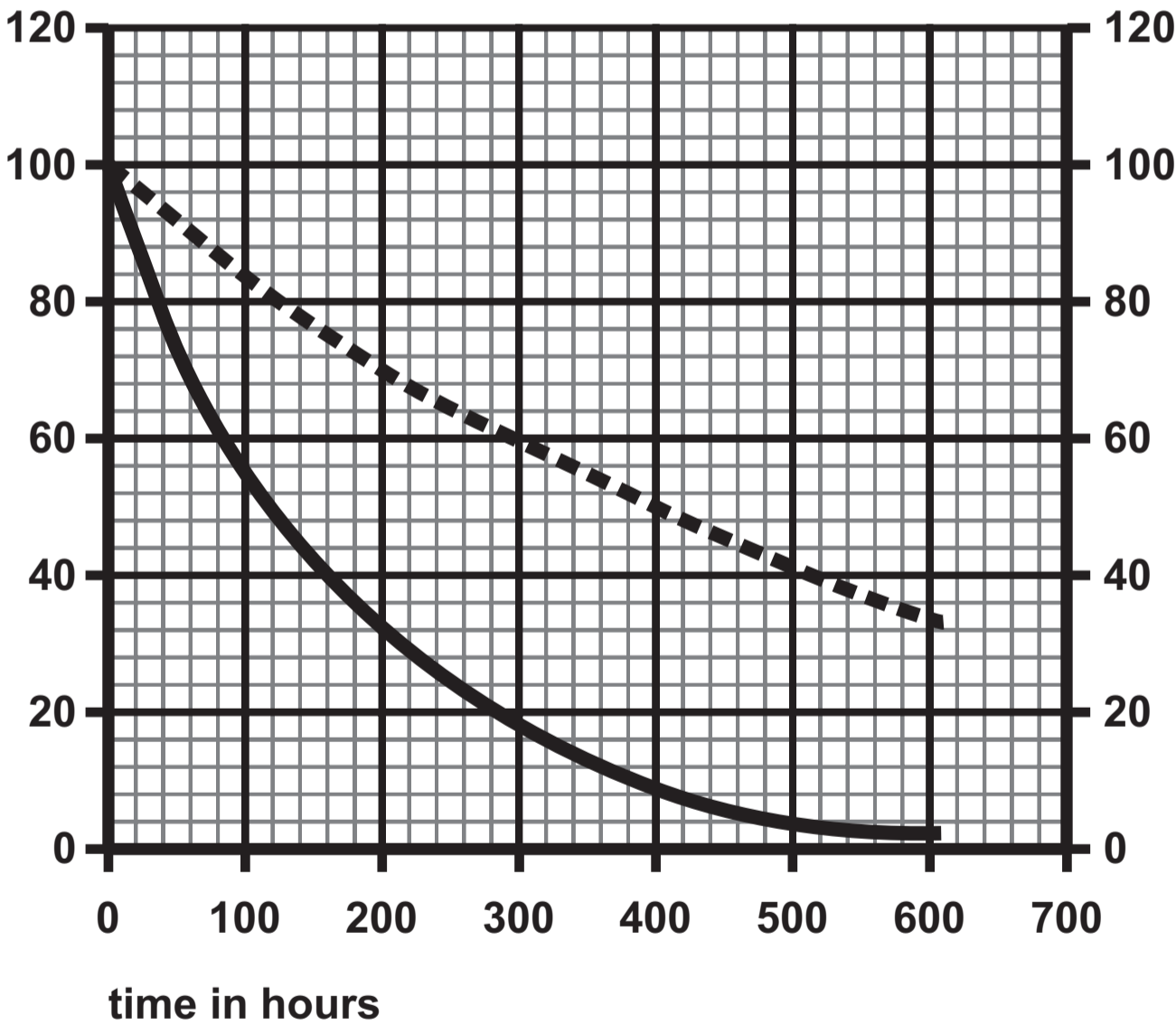
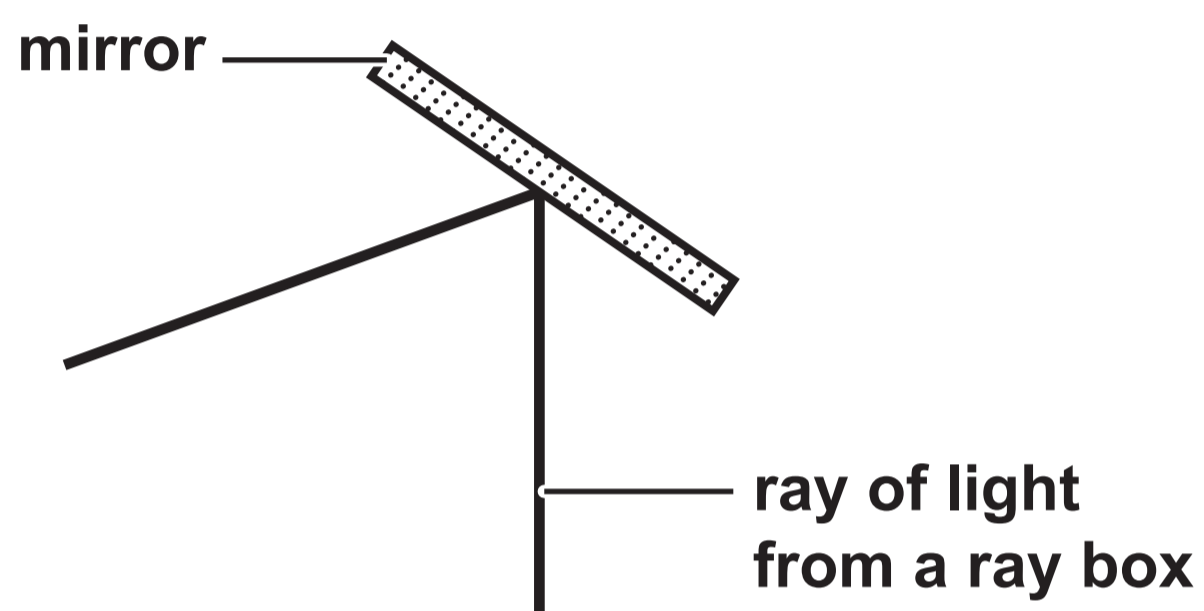


FIGURE 7

	UVA	UVB	UVC
wavelength range	400 nm to 315 nm	314 nm to 280 nm	279 nm to 100 nm
% energy absorbed by the Earth's atmosphere	5%	95%	100%

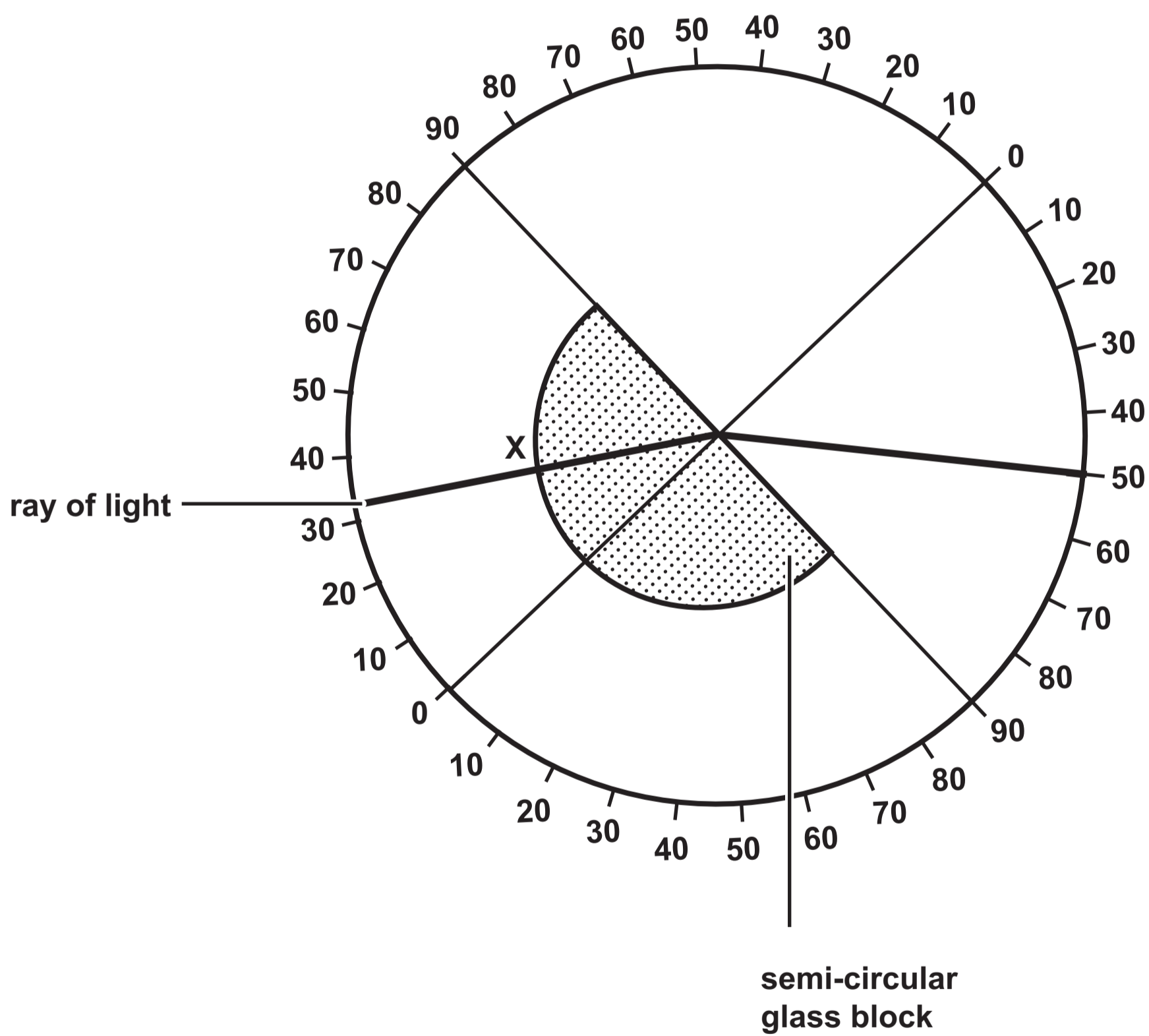
## Question 6(a)(ii)

FIGURE 8



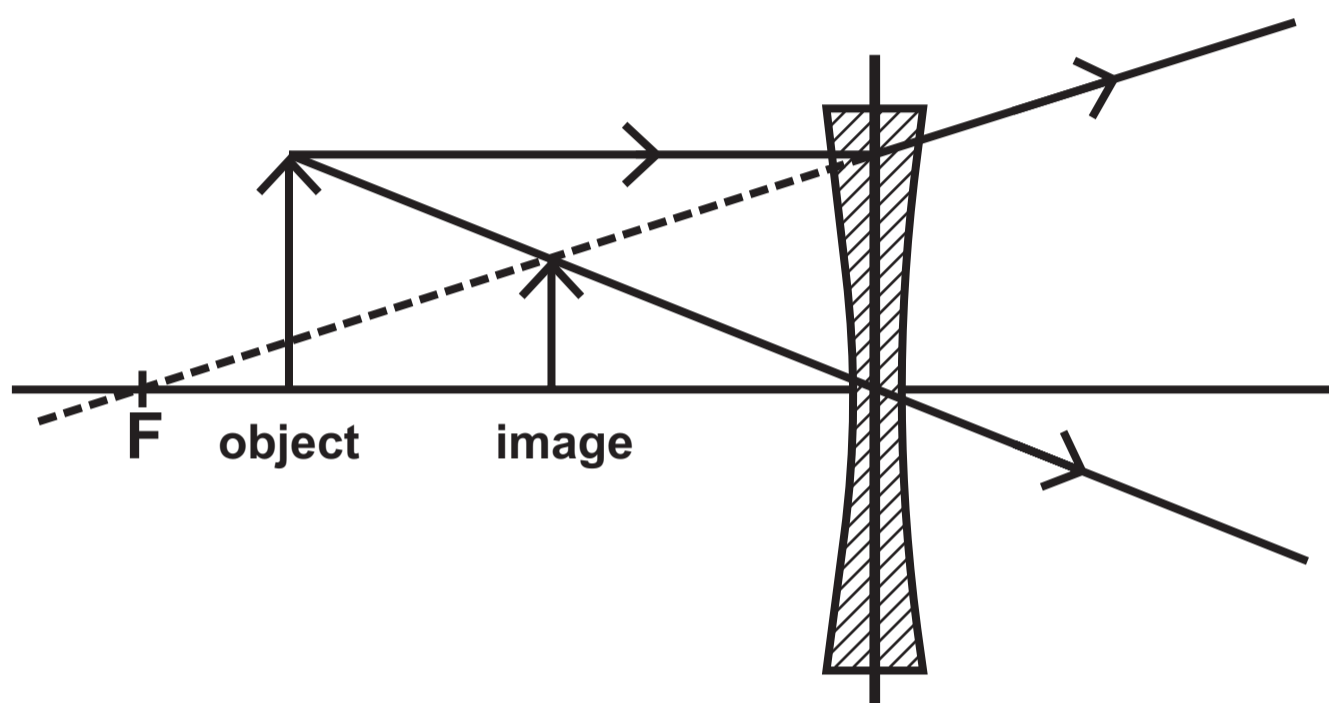
## Question 6(b)

FIGURE 9



## Question 6(c)

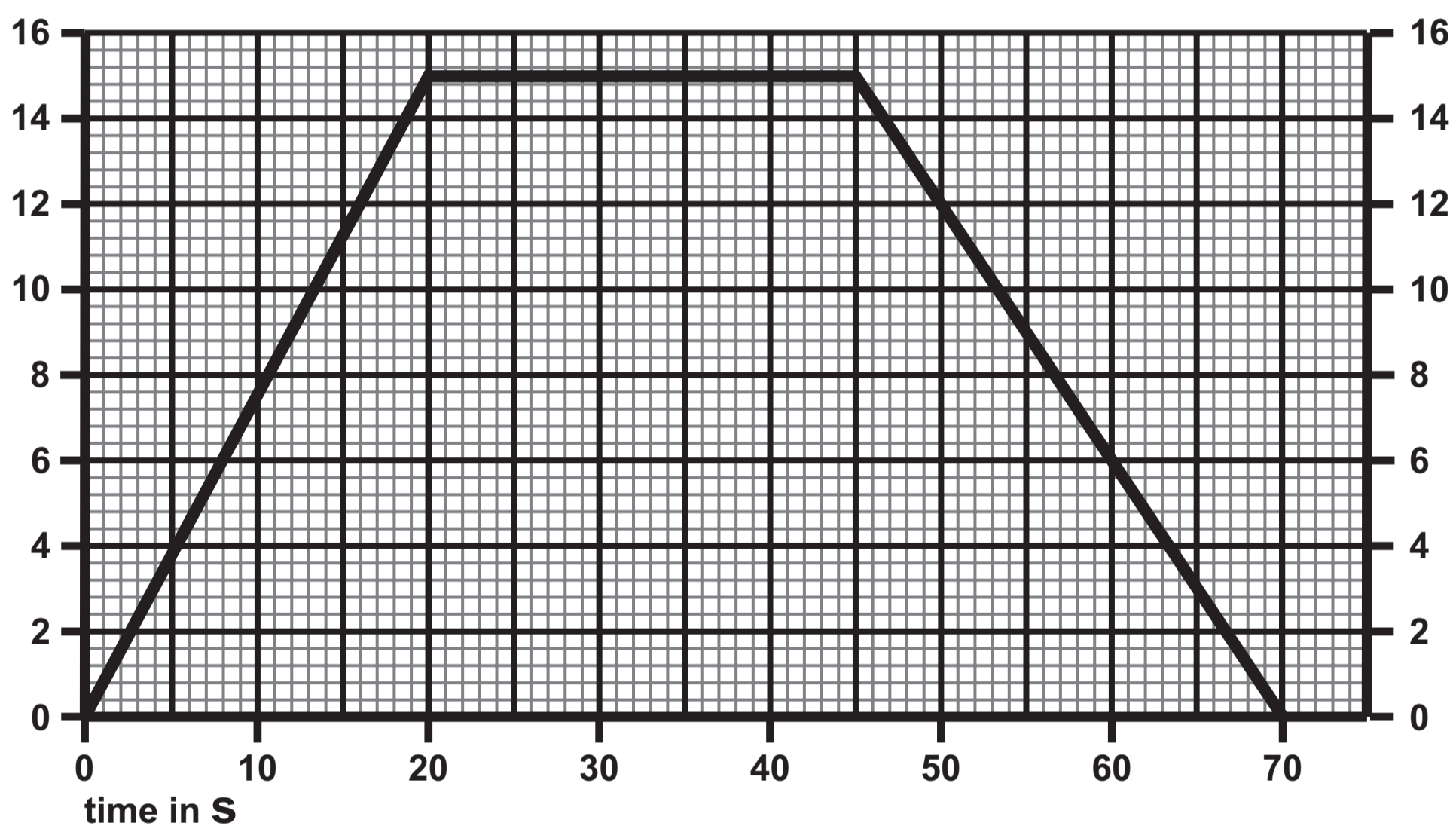
FIGURE 10



## Question 7(a)

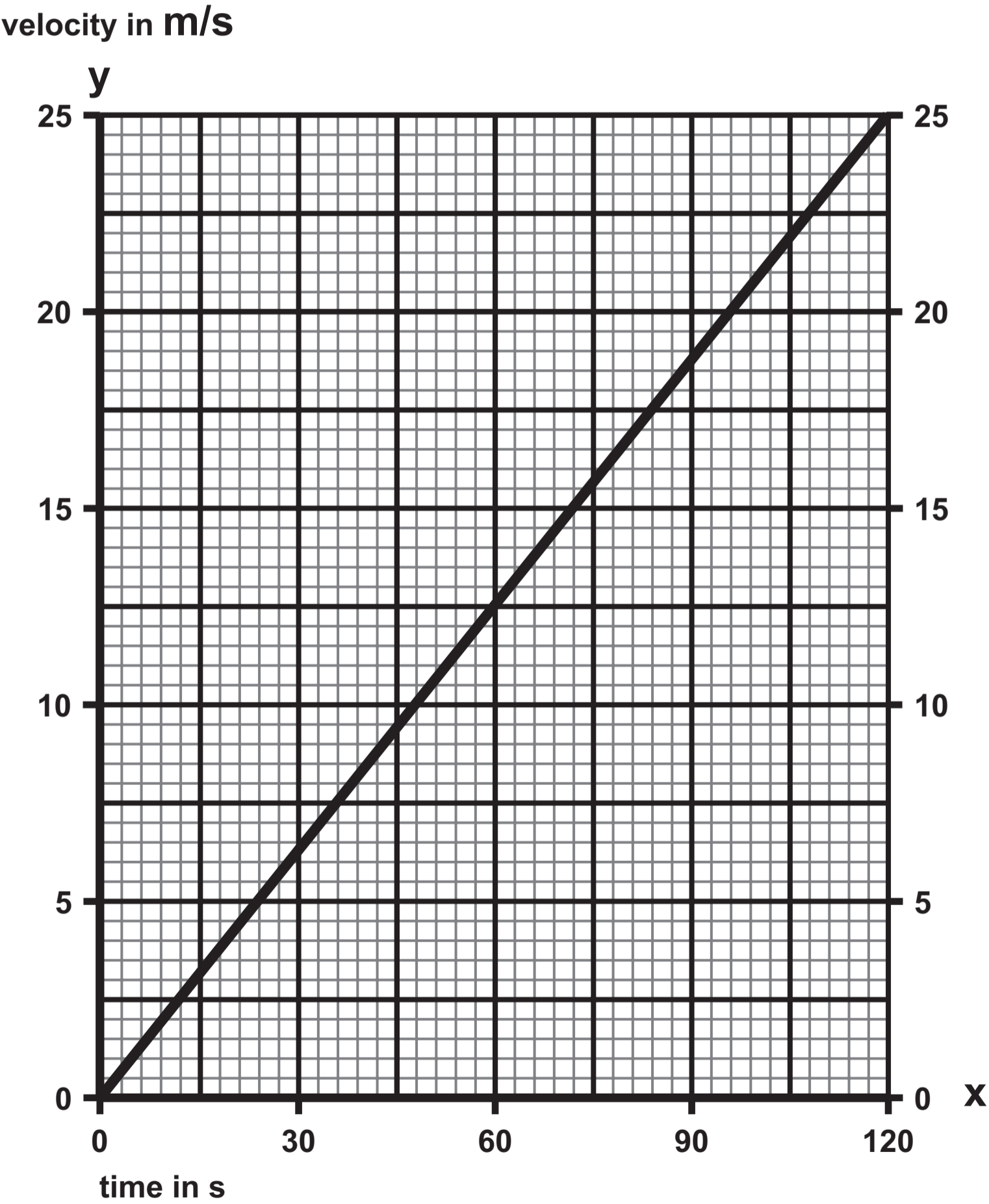
FIGURE 11

velocity in m/s

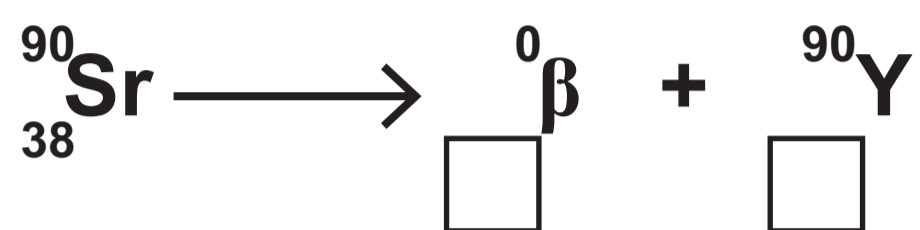


Question 7(c)

FIGURE 12

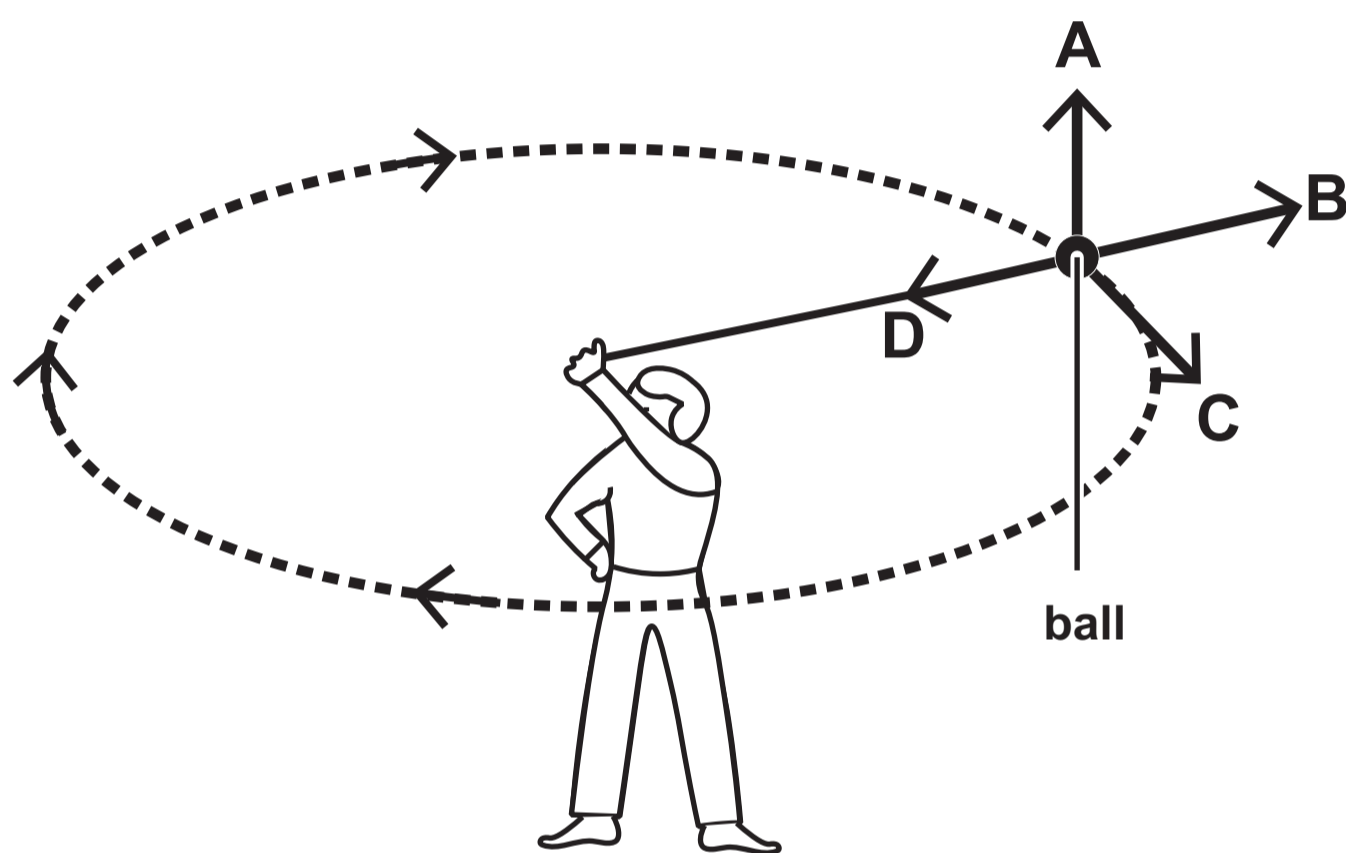


## Question 8(d)(iv)



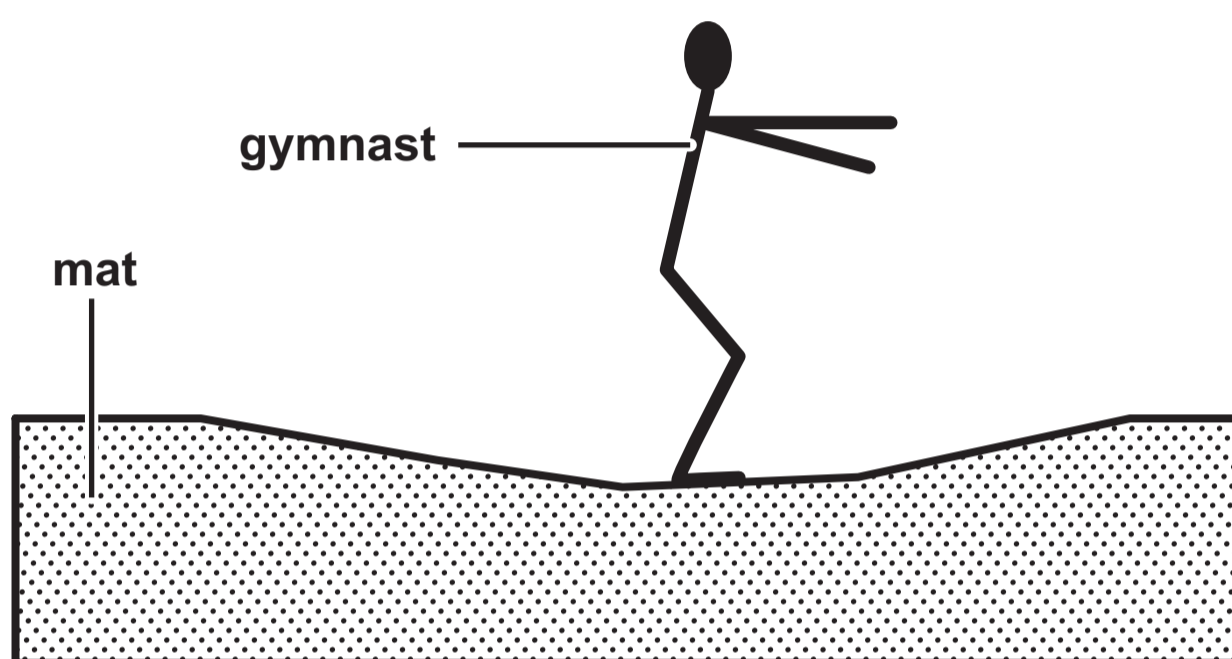
## Question 9(a)

FIGURE 13



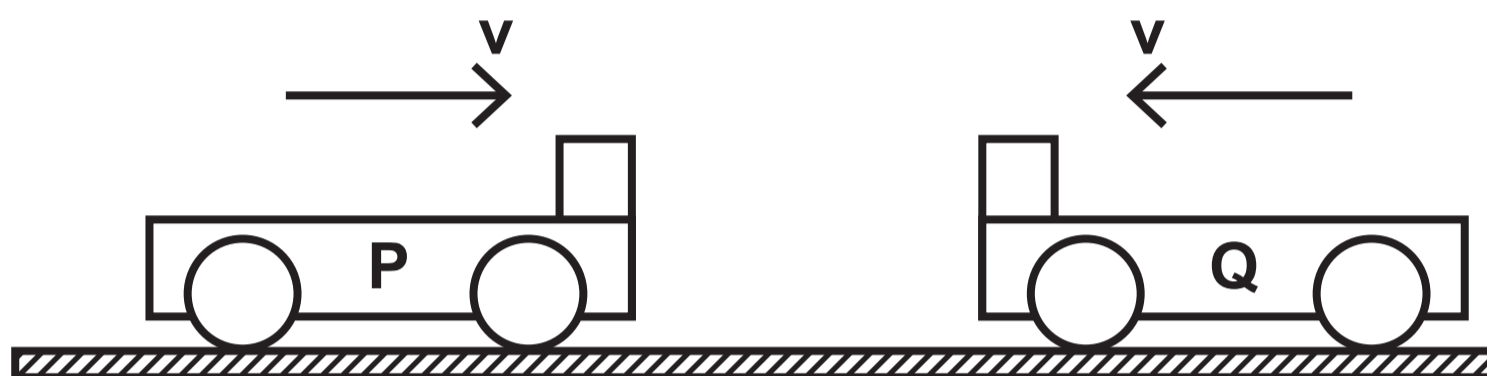
## Question 9(b)

FIGURE 14



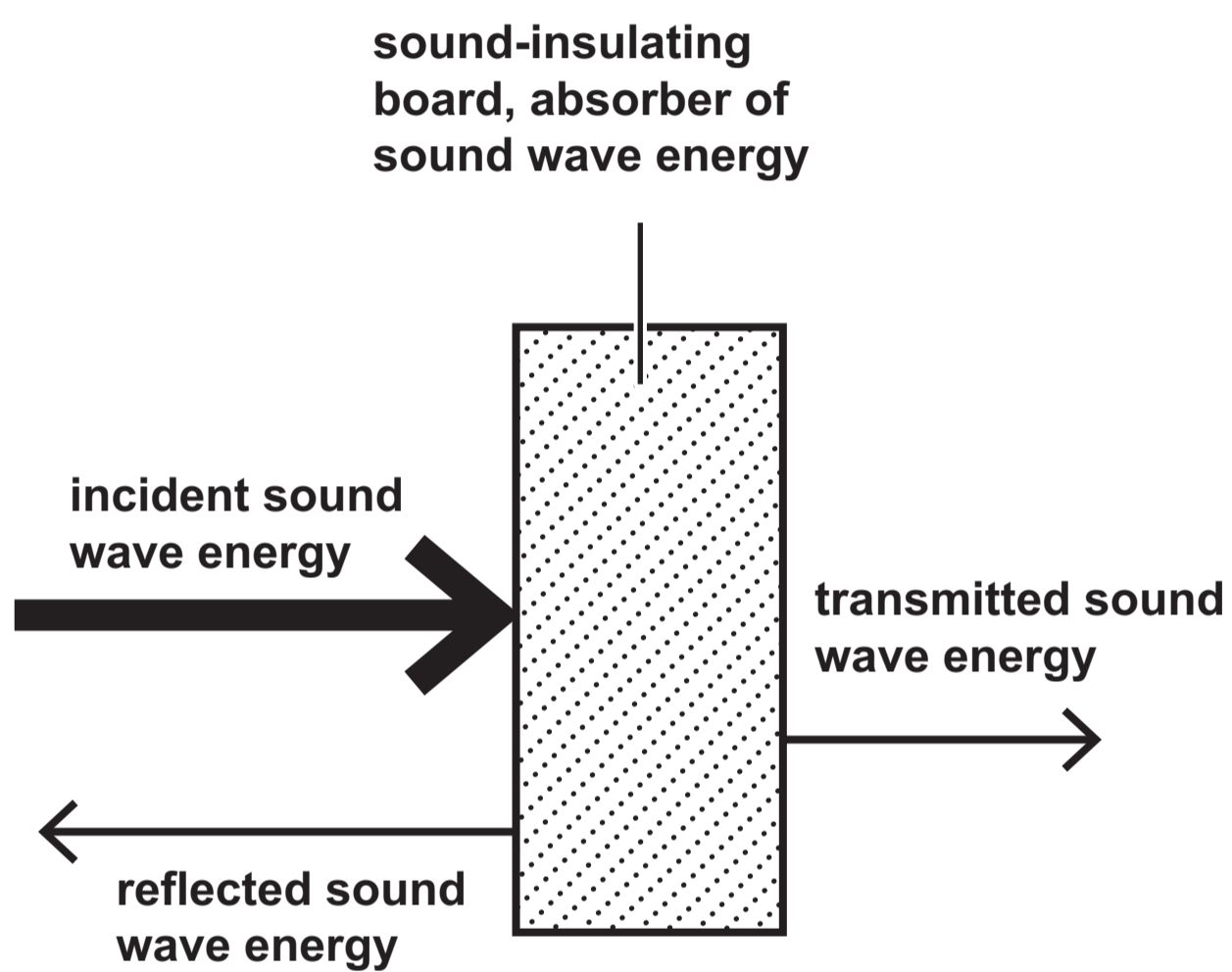
## Question 9(c)

FIGURE 15



## Question 10(b)

FIGURE 16



Question 10(c)

FIGURE 17

material	$\alpha = \frac{E_a}{E_i}$
curtains	0.55
painted walls	0.02
wood floors	0.10
carpeted floors	0.60

## Question 8(d)(iv)

