

Design and Technology  
COMPONENT 1: Polymers

Tuesday 18 June 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

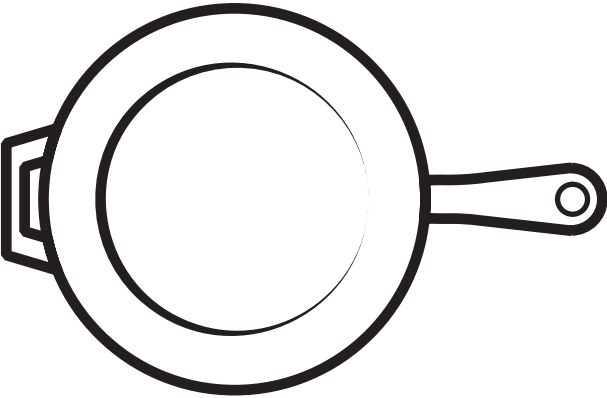
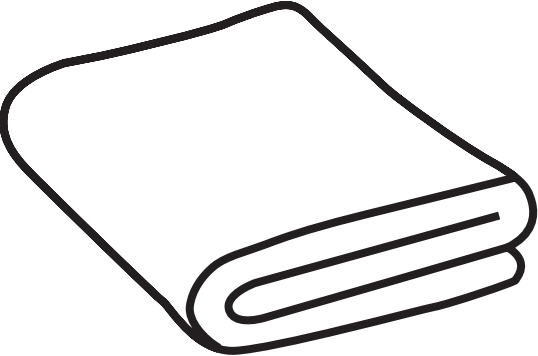
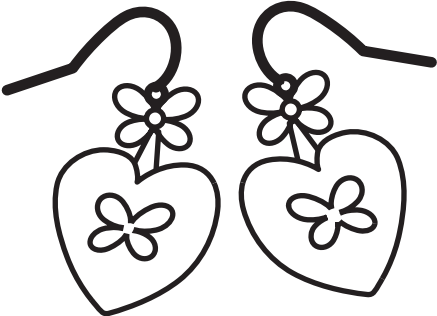

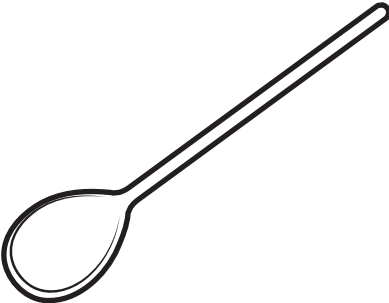
|       |                   |
|-------|-------------------|
| 3     | Question 1(a)     |
| 4     | Question 2        |
| 5     | Question 2(d)(i)  |
| 6     | Question 2(d)(ii) |
| 7     | Question 3        |
| 8     | Question 3(c)     |
| 9     | Question 3(d)     |
| 10    | Question 3(e)     |
| 11–12 | Question 5        |
| 13    | Question 5(a)     |
| 14    | Question 5(b)     |
| 15    | Question 6        |
| 16    | Question 6(b)     |
| 17    | Question 6(d)     |
| 18    | Question 7        |
| 19    | Question 7(c)     |
| 20    | Question 7(d)     |
| 21    | Question 8        |
| 22    | Question 8(d)     |

### Spare Copies

|    |                   |
|----|-------------------|
| 23 | Question 1(a)     |
| 24 | Question 2(d)(i)  |
| 25 | Question 2(d)(ii) |
| 26 | Question 5(a)     |

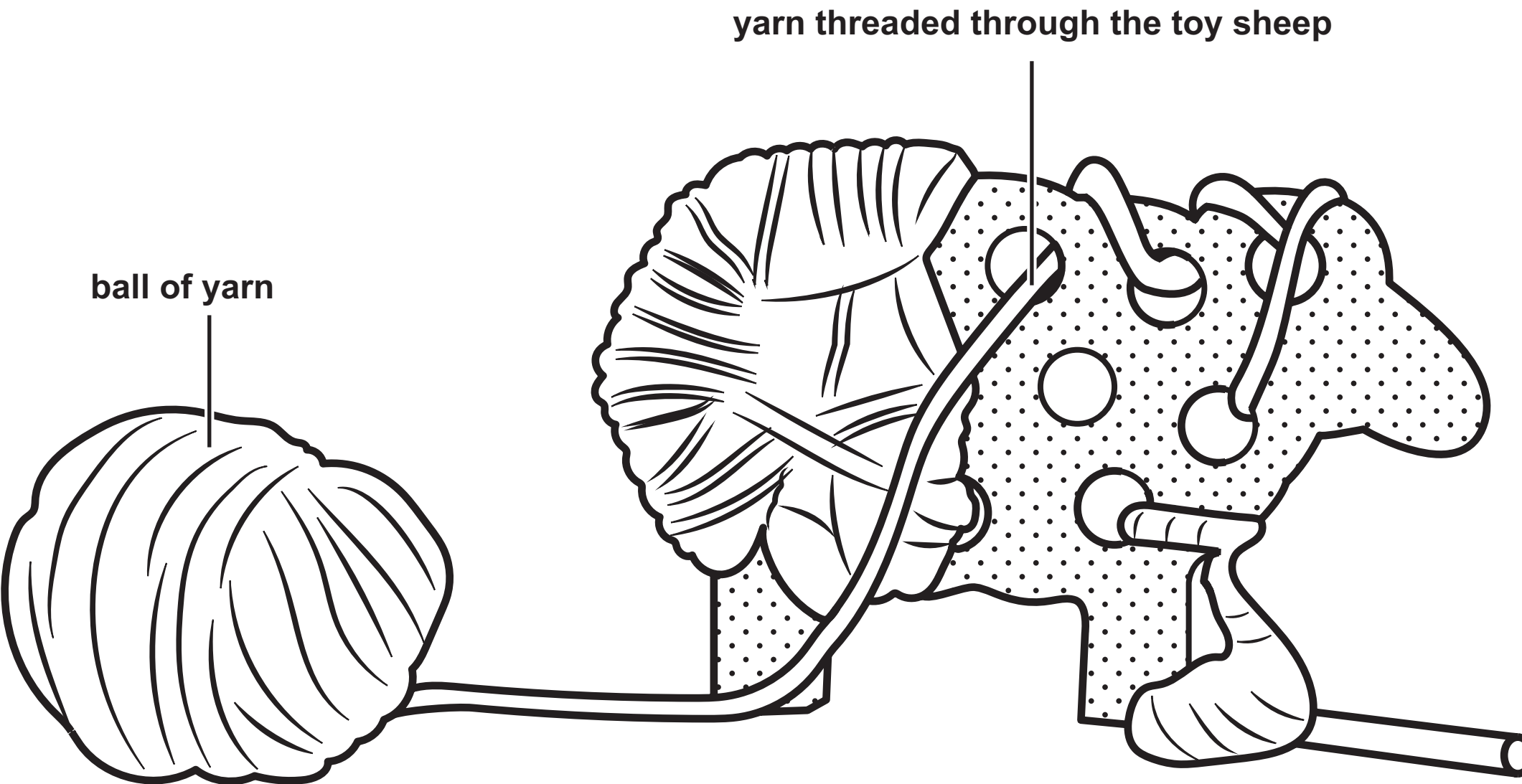
Question 1(a)

FIGURE 1

| PICTURE OF PRODUCT  | MATERIAL AND PRODUCT     | PROPERTY                |
|---|--------------------------|-------------------------|
|   | Cast iron frying pan     | Hard                    |
|  | Cotton bath towel        | (i) _____<br>(1 mark)   |
|  | Polyester resin earrings | (ii) _____<br>(1 mark)  |
|  | Copier paper             | (iii) _____<br>(1 mark) |
|  | Beech cooking spoon      | (iv) _____<br>(1 mark)  |

Question 2

FIGURE 2



Question 2(d)(i)

FIGURE 3

| ANIMAL | NUMBER OF VOTES | PERCENTAGE OF VOTES (%) |
|--------|-----------------|-------------------------|
| Cat    | 165             | 55                      |
| Dog    | 75              | 25                      |
| Rabbit | <hr/>           | 15                      |
| Mouse  | <hr/>           | 5                       |
| TOTAL  | 300             | 100                     |

Question 2(d)(ii)

FIGURE 4

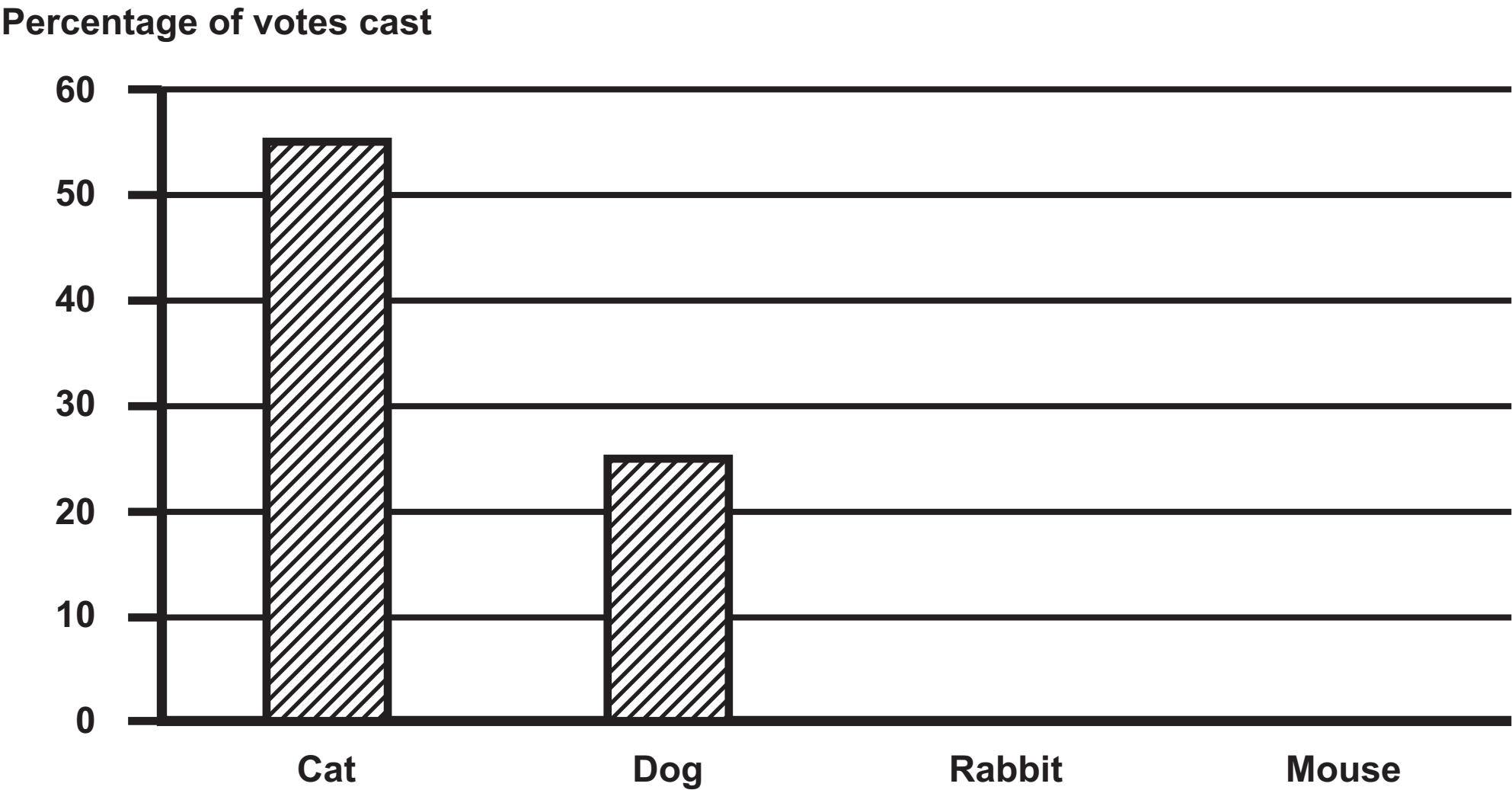
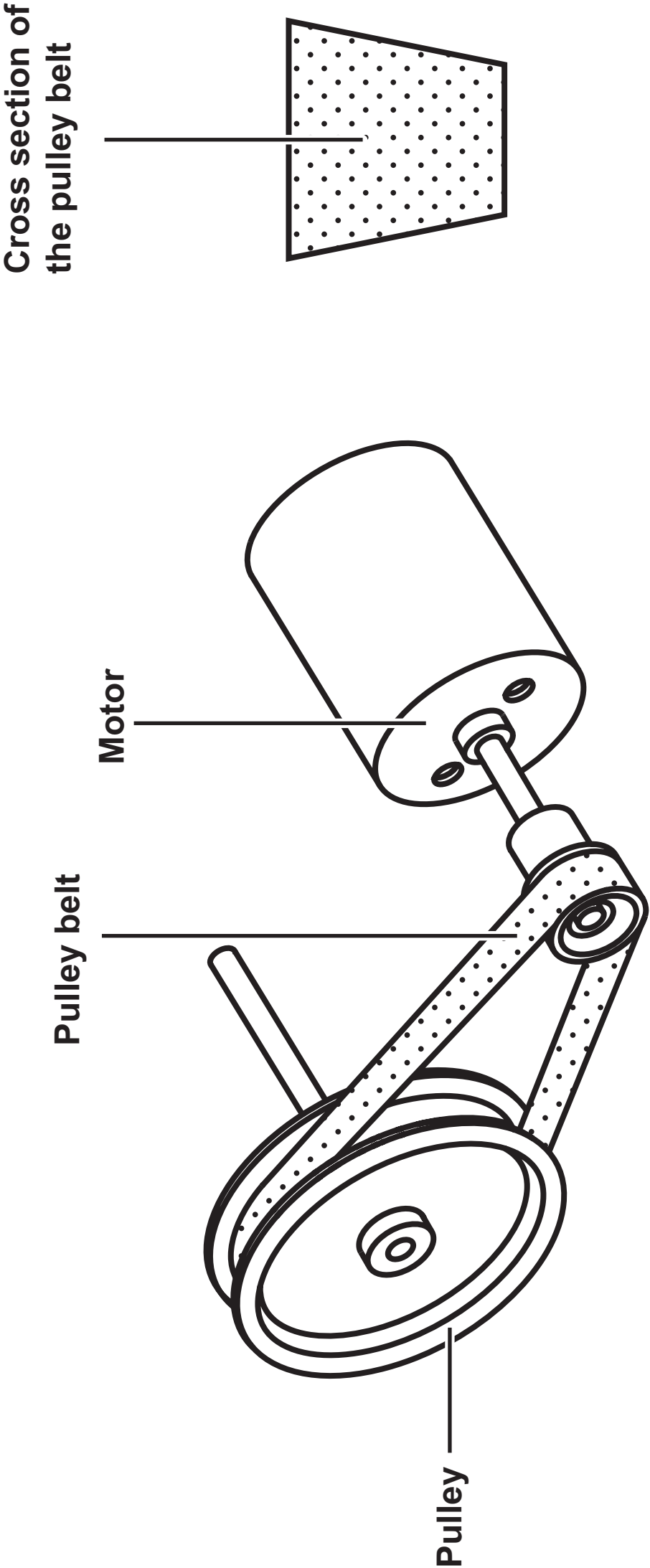
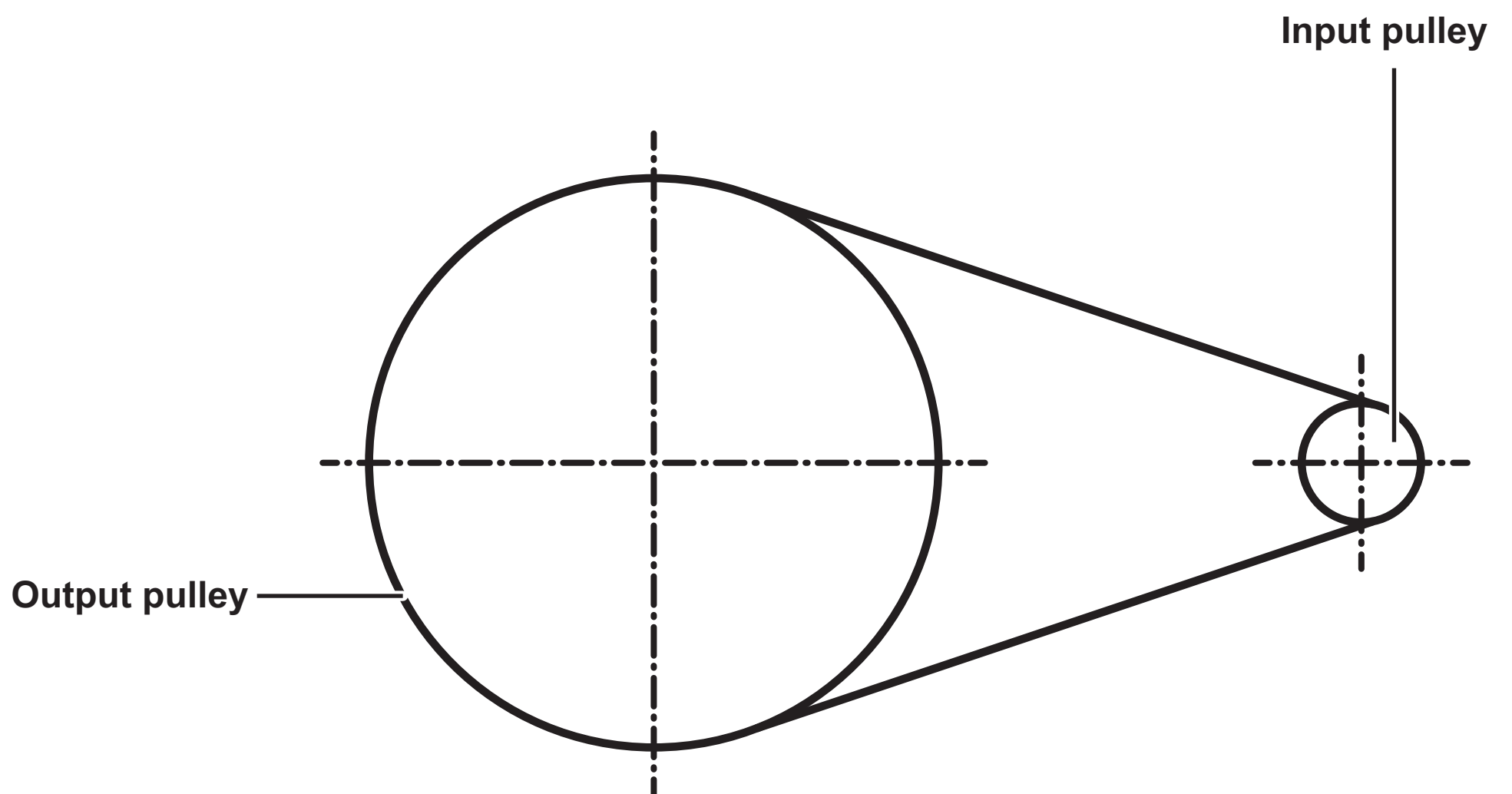


FIGURE 5

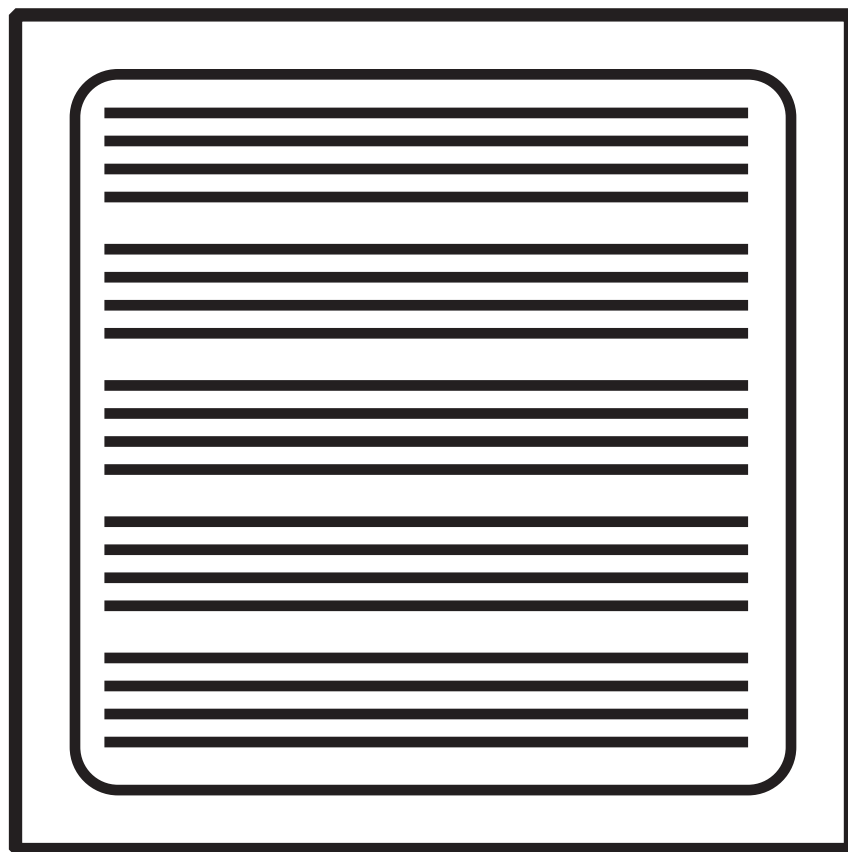


## Question 3(c)

FIGURE 6

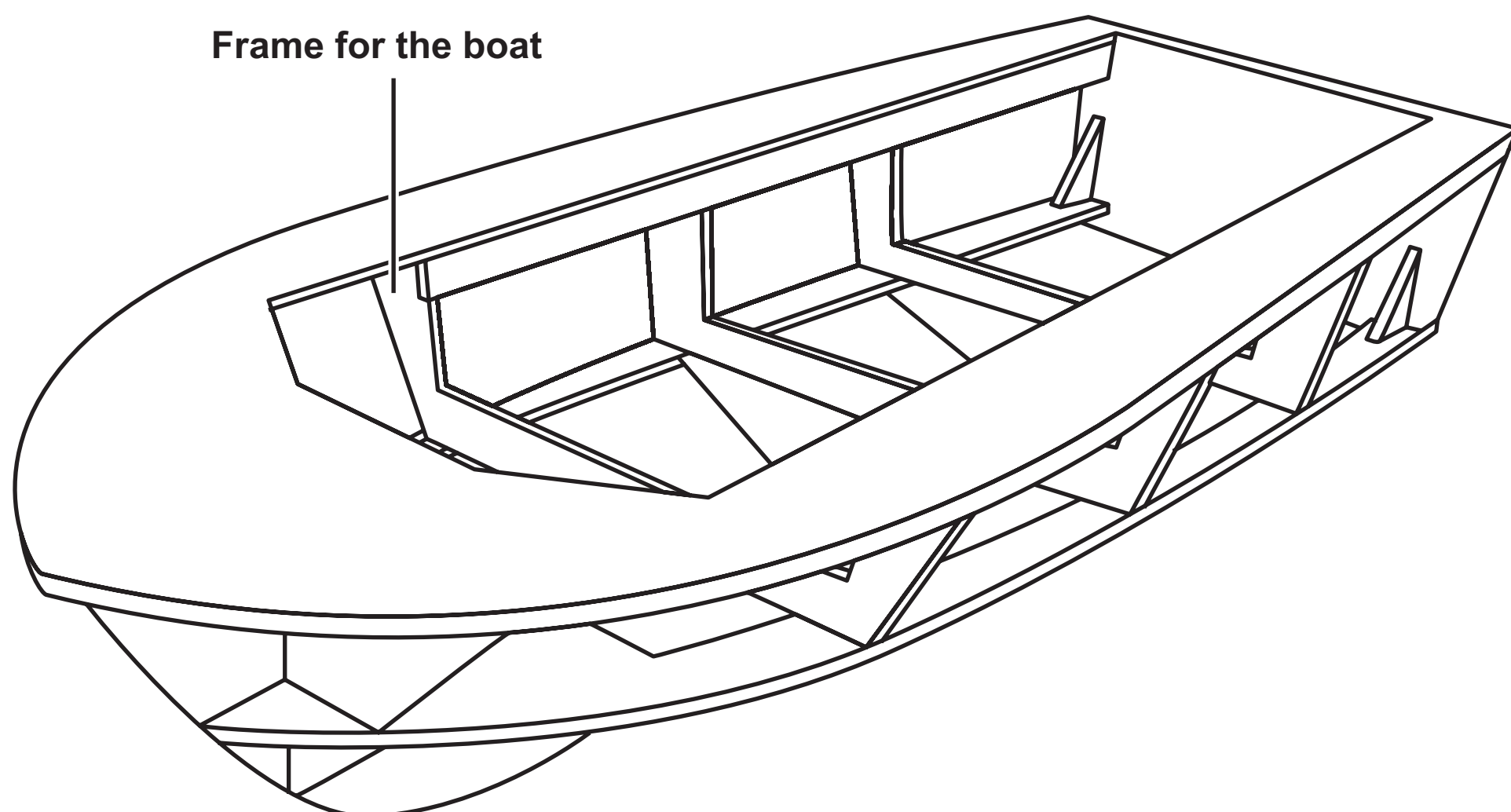




**Question 3(d)****FIGURE 7**

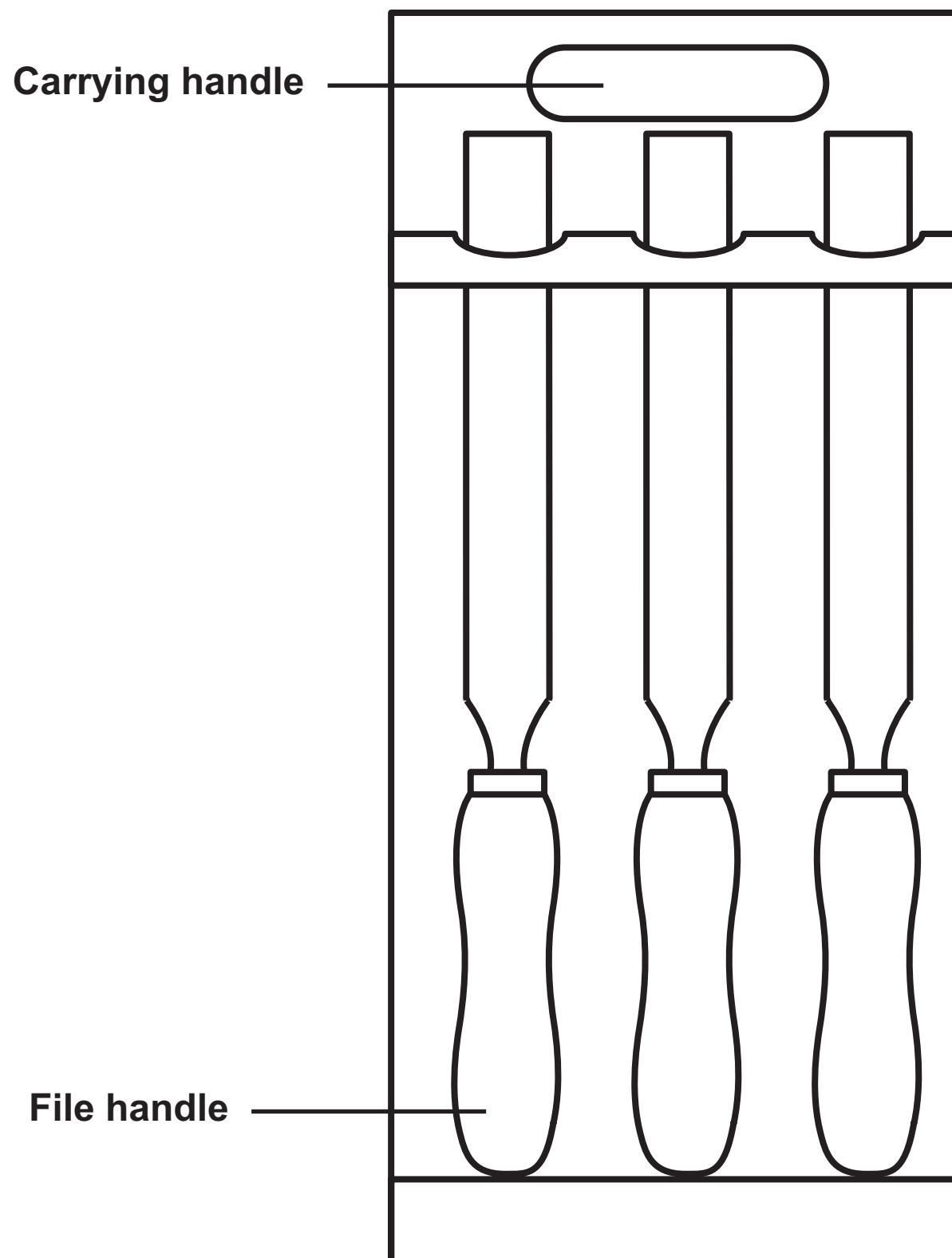
## Question 3(e)

FIGURE 8



## Question 5

FIGURE 9



(continued on the next page)

Turn over

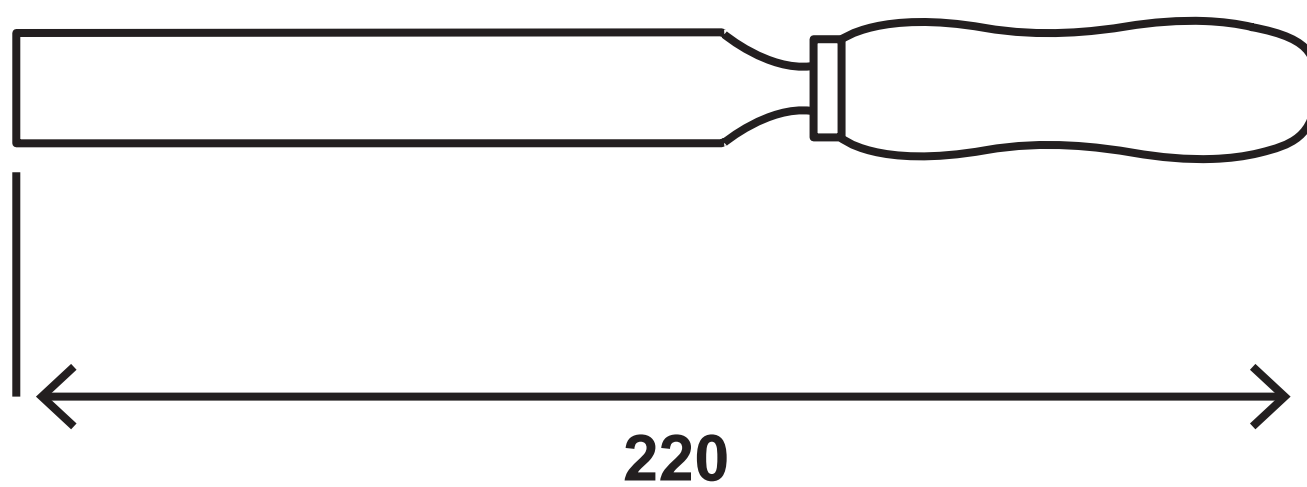
5 continued.

**FIGURE 9**

**Additional information – dimensions of files**

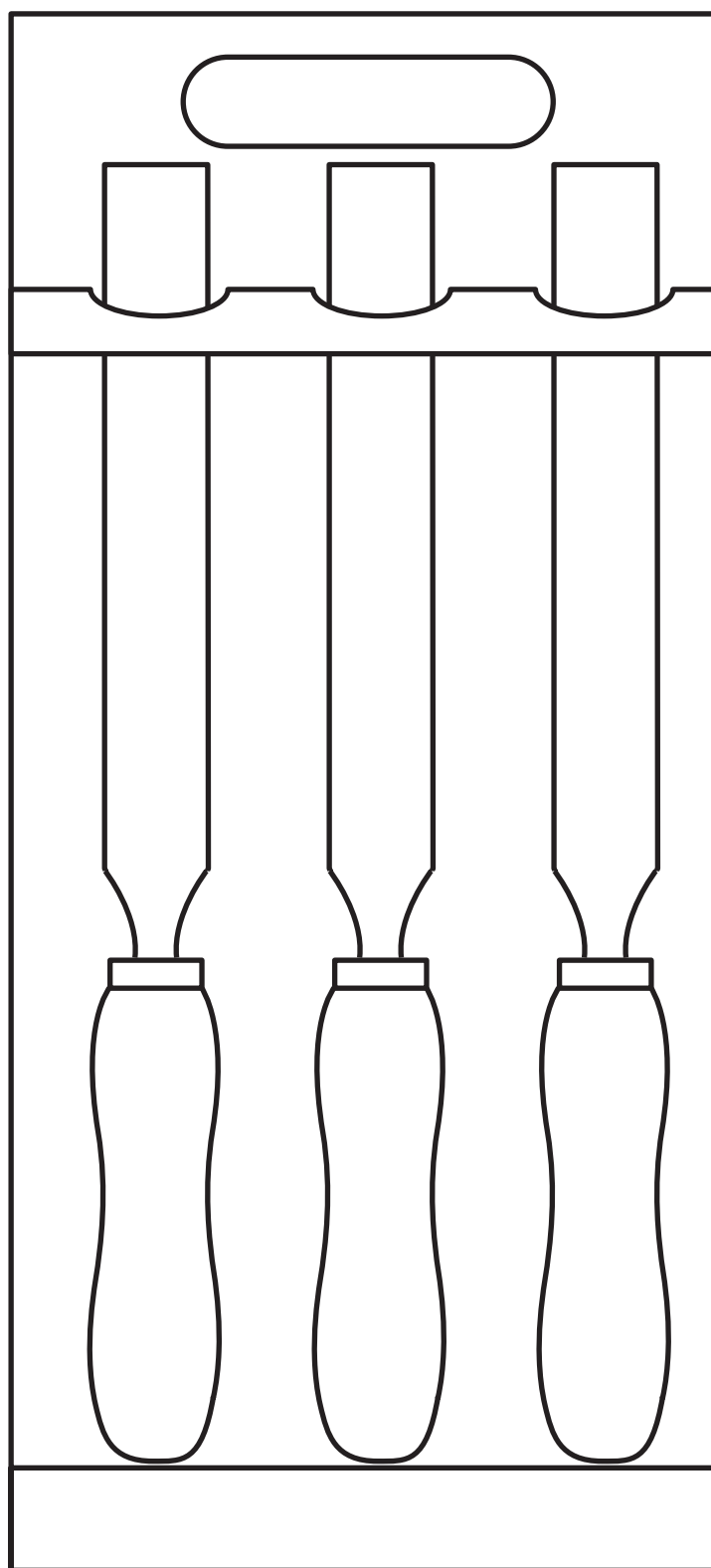
**All dimensions in mm**

**Diagram not to scale**



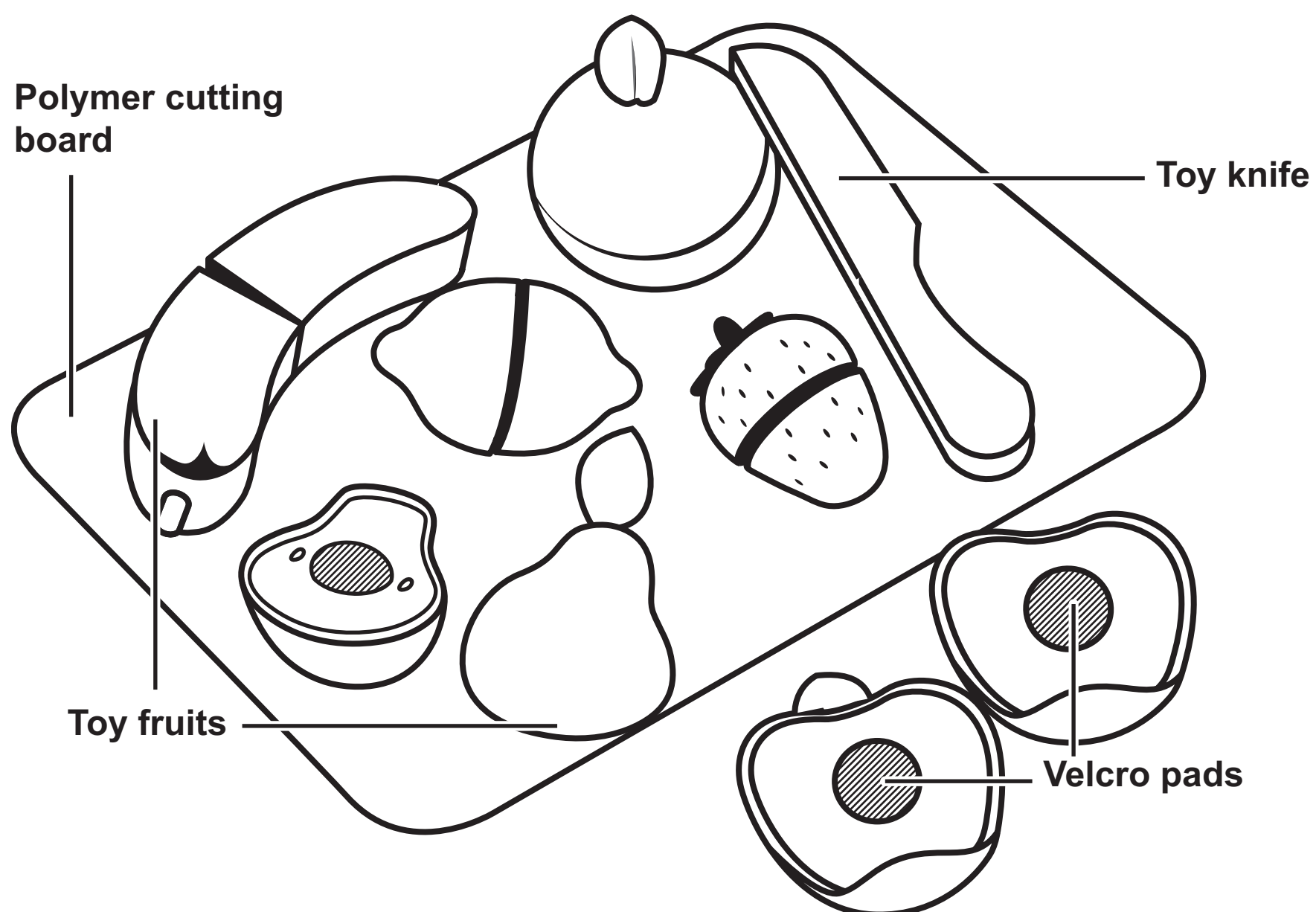
**Question 5(a)**

**outline of the original design solution**



## Question 5(b)

FIGURE 10

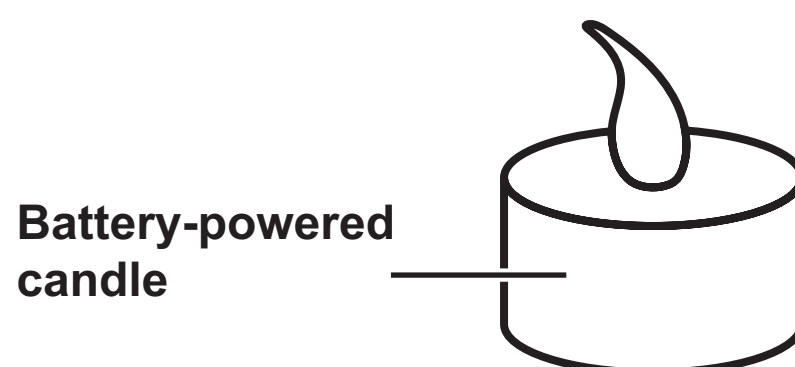
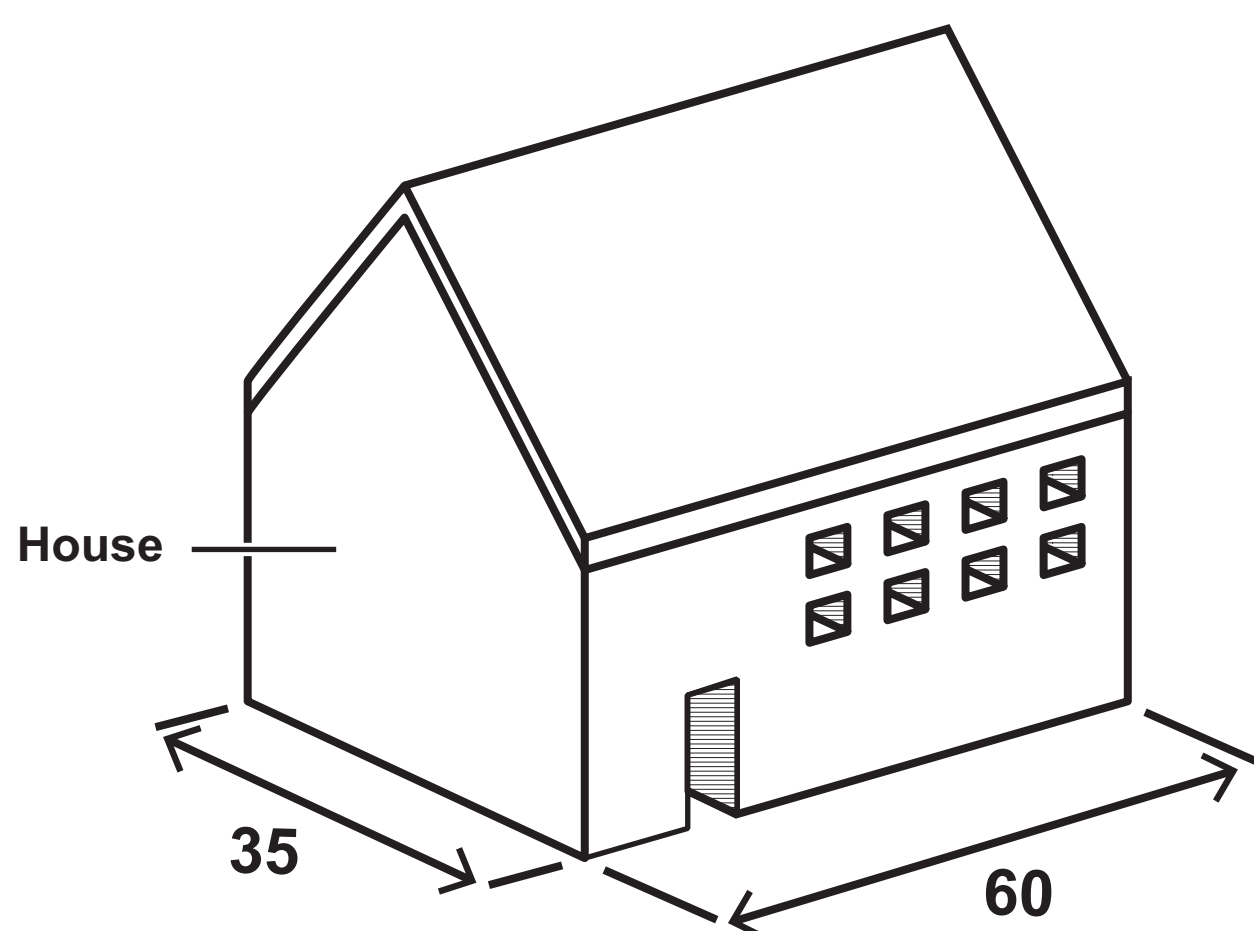


## Question 6

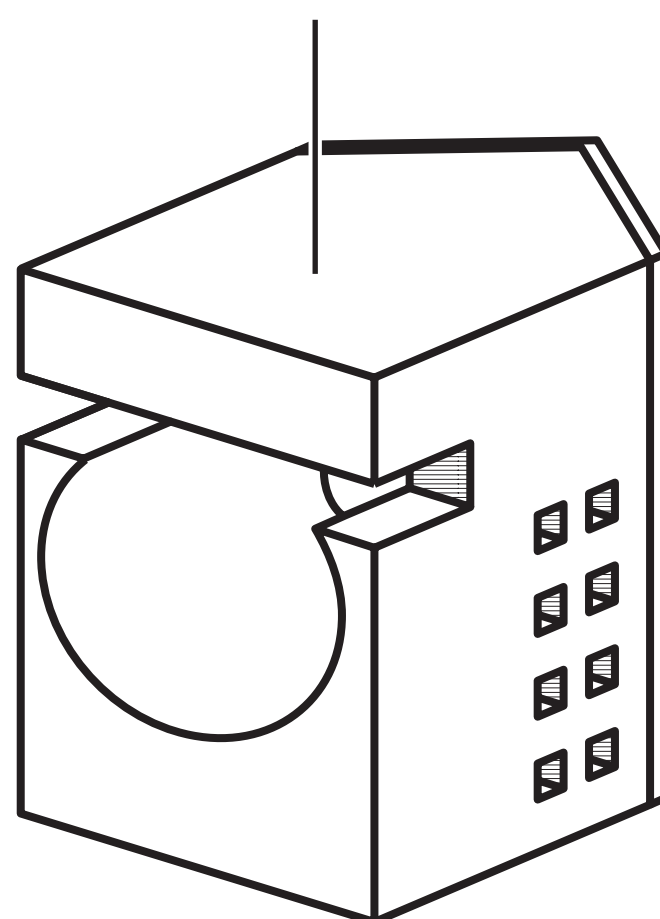
FIGURE 11

All dimensions in mm

Diagram not to scale



House tipped onto one end to see the hole for the candle in the underside

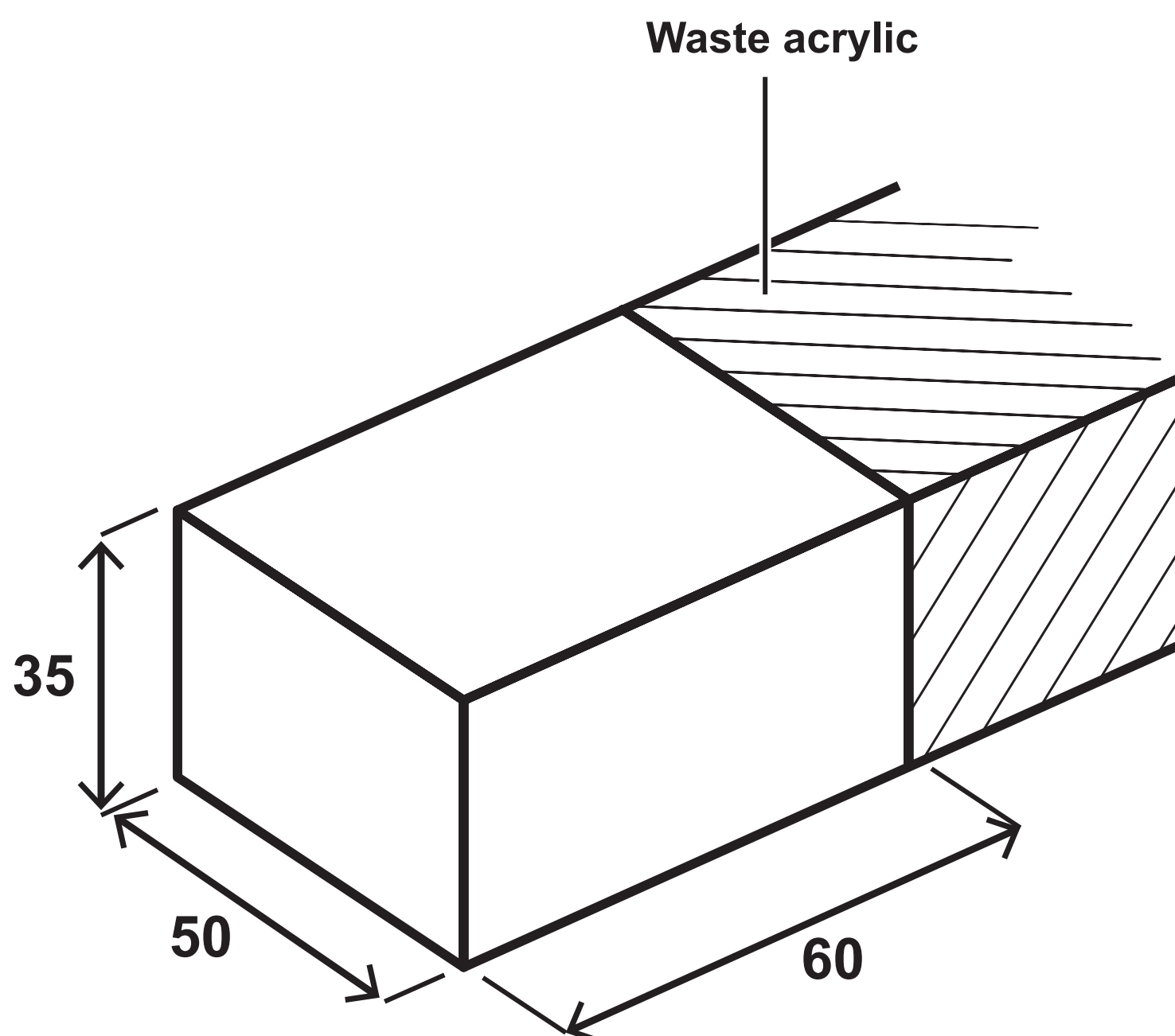


## Question 6(b)

FIGURE 12

All dimensions in mm

Diagram not to scale



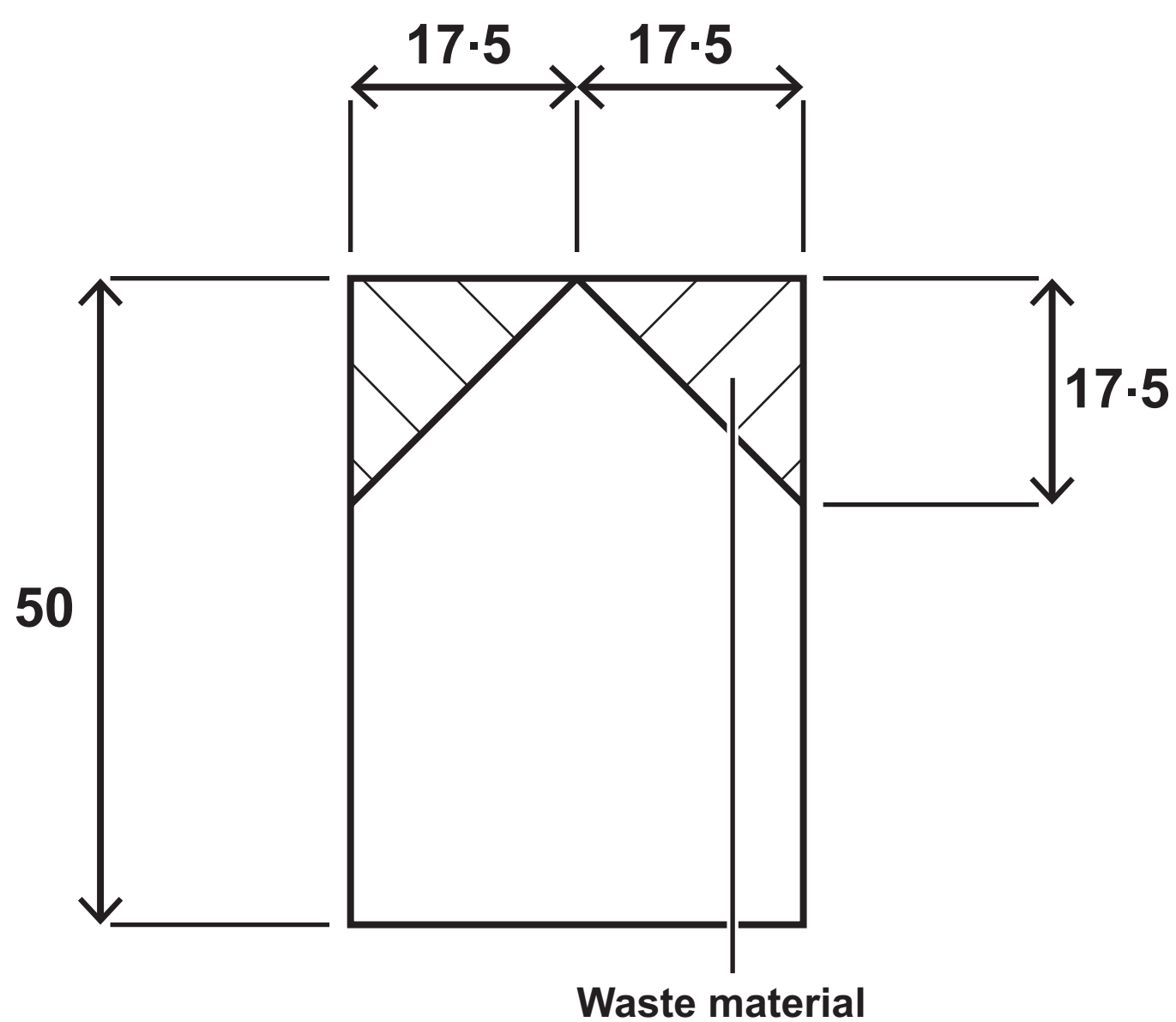


## Question 6(d)

FIGURE 13

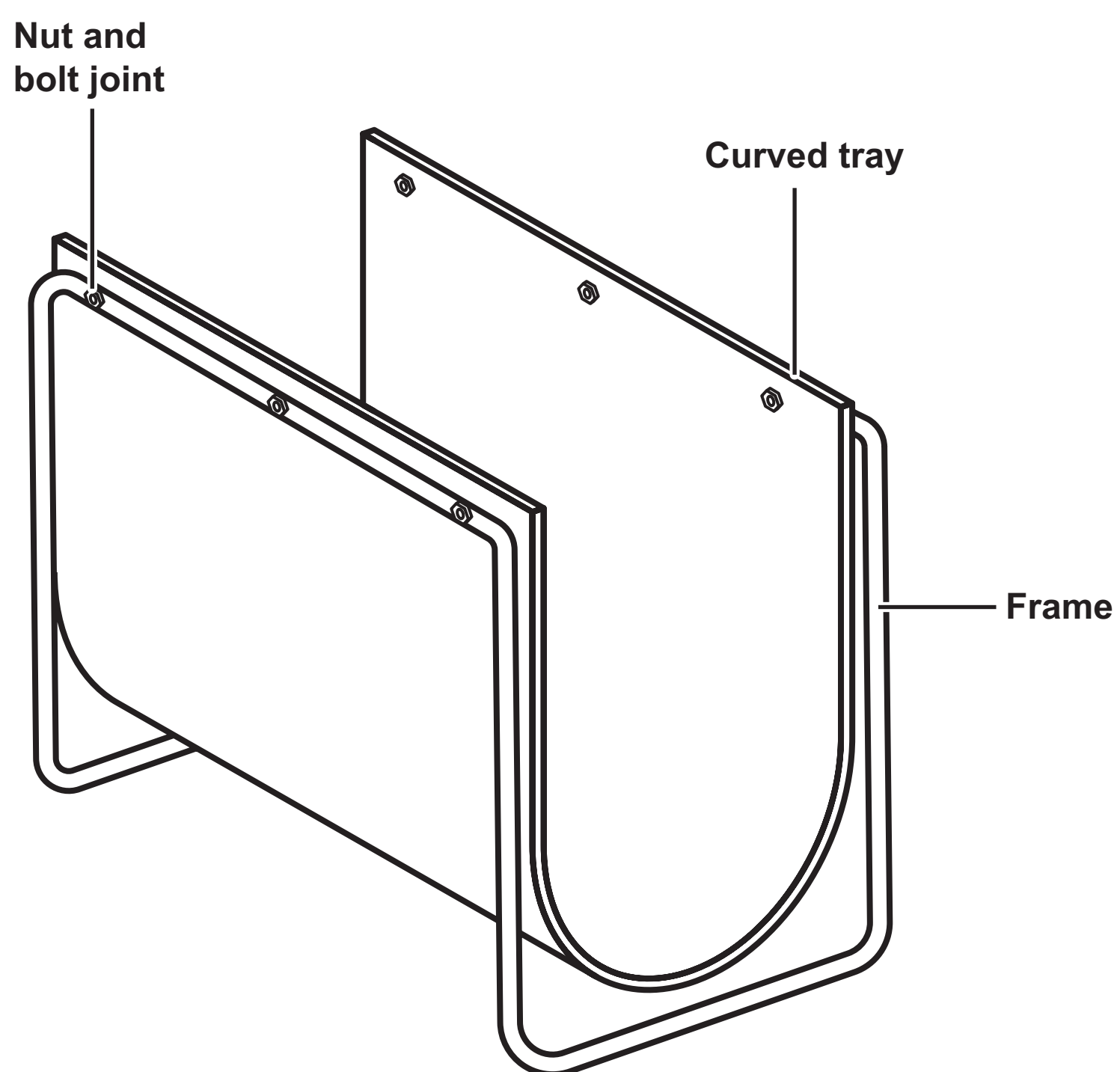
All dimensions in mm

Diagram not to scale



## Question 7

FIGURE 14

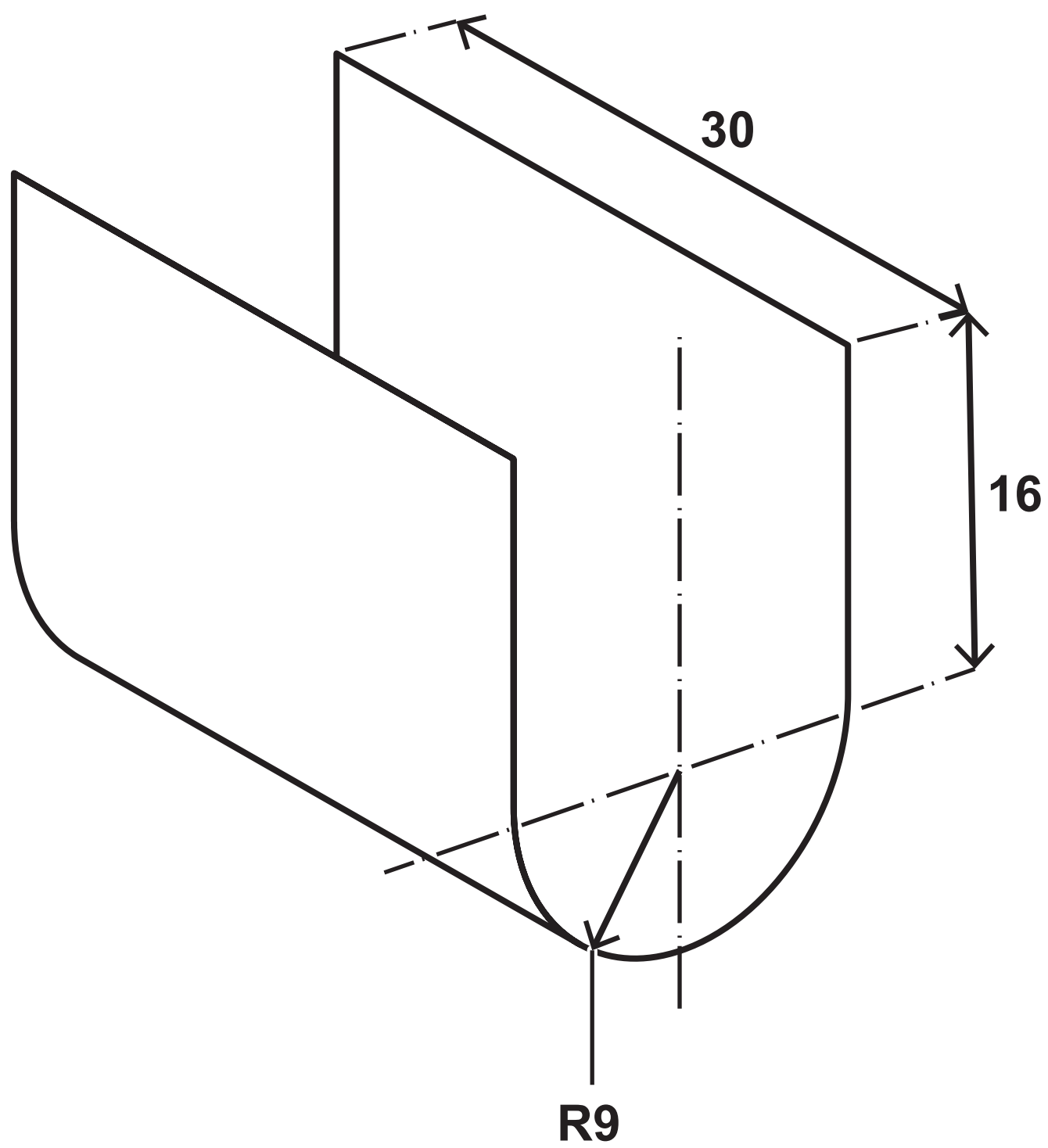


## Question 7(c)

FIGURE 15

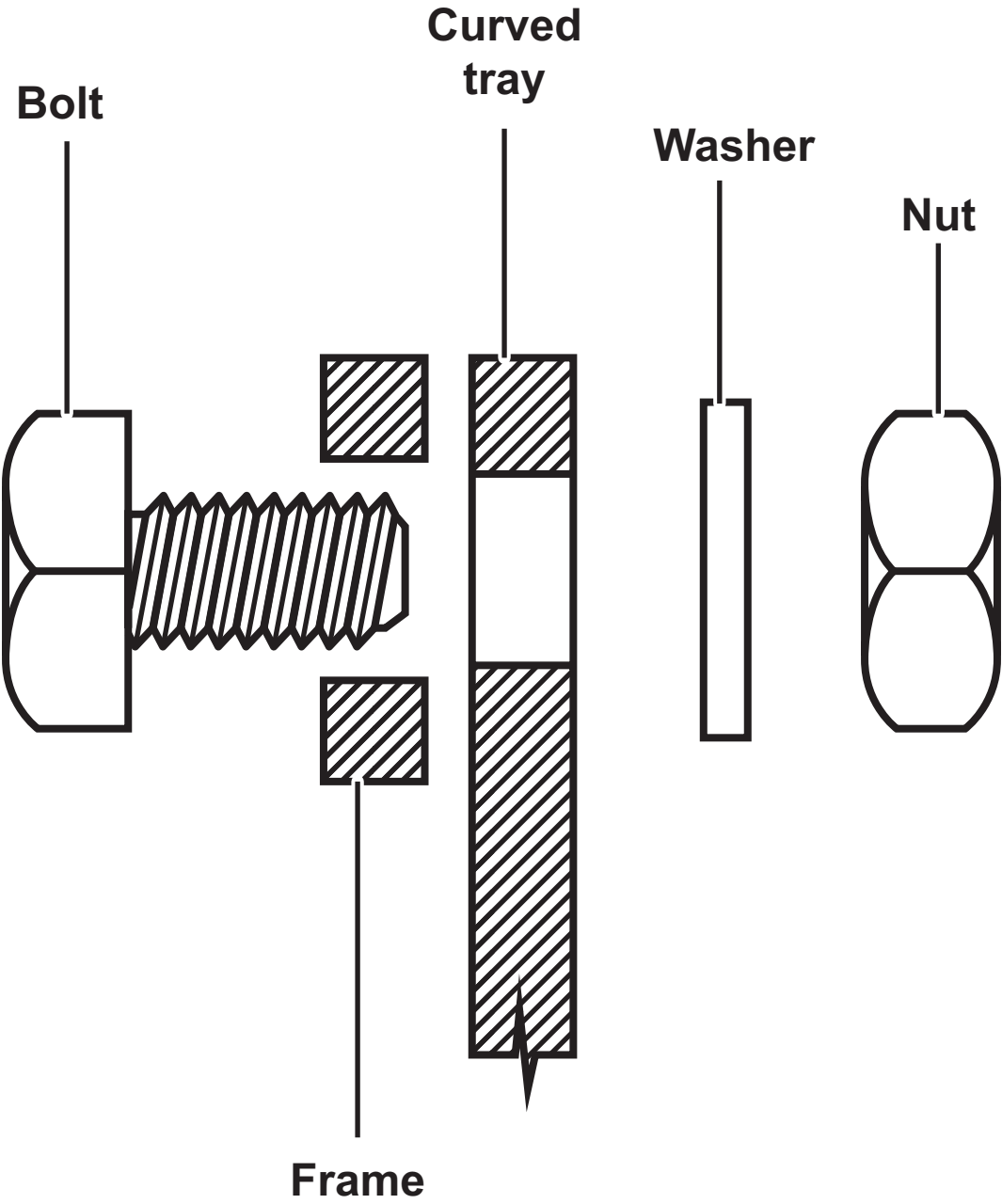
All dimensions in cm

Diagram not to scale



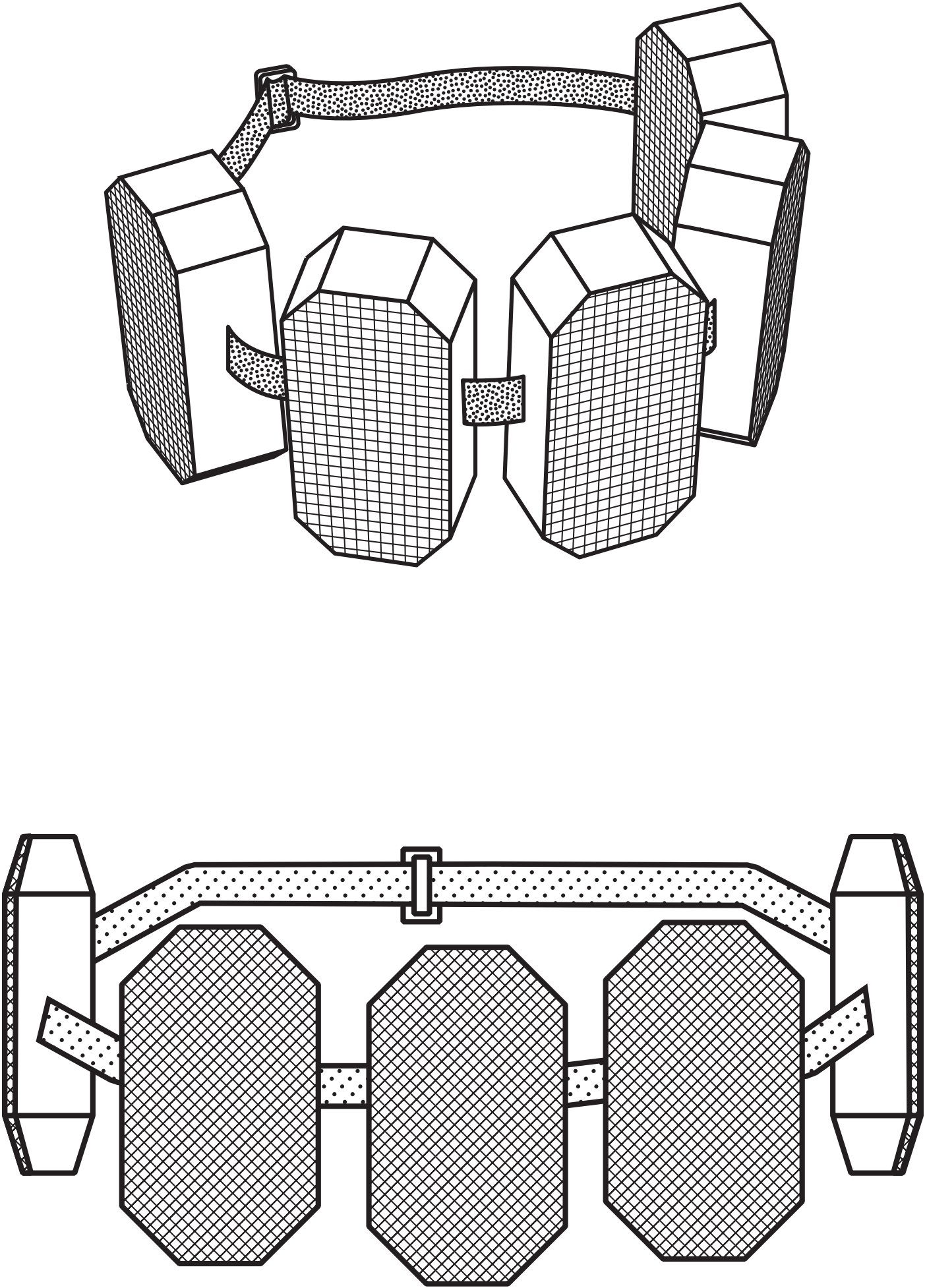
Question 7(d)

FIGURE 16



Question 8

FIGURE 17



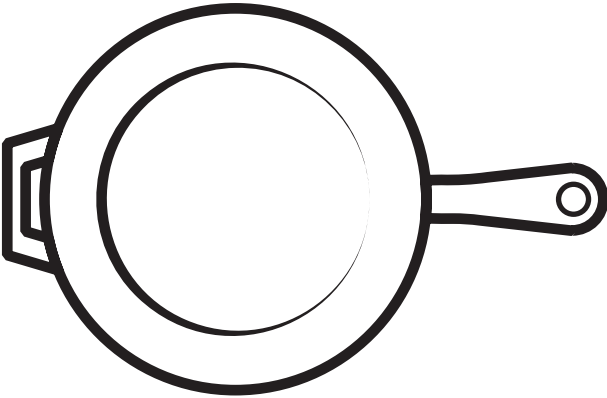
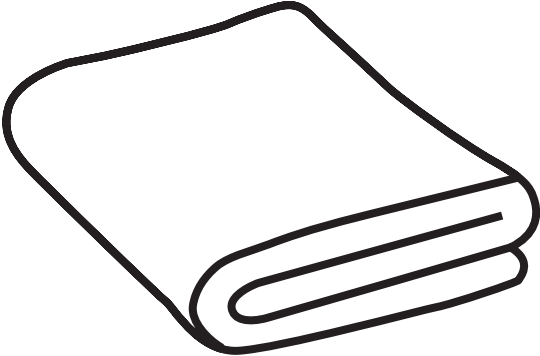
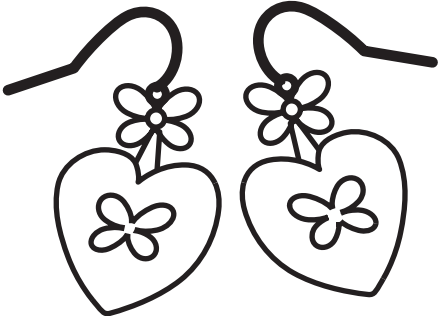

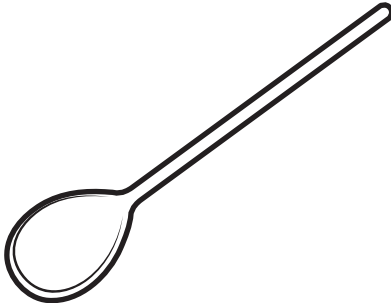
Question 8(d)

FIGURE 18

|                                |  |
|--------------------------------|--|
| Source of expanded polystyrene | Saudi Arabia                                     |
| Country of manufacture         | United Kingdom                                   |
| Potential market               | Swimming clubs, health clubs, schools and hotels |
| Scale of production            | Batch  |

Question 1(a)

FIGURE 1

| PICTURE OF PRODUCT  | MATERIAL AND PRODUCT     | PROPERTY                |
|---|--------------------------|-------------------------|
|   | Cast iron frying pan     | Hard                    |
|  | Cotton bath towel        | (i) _____<br>(1 mark)   |
|  | Polyester resin earrings | (ii) _____<br>(1 mark)  |
|  | Copier paper             | (iii) _____<br>(1 mark) |
|  | Beech cooking spoon      | (iv) _____<br>(1 mark)  |

Question 2(d)(i)

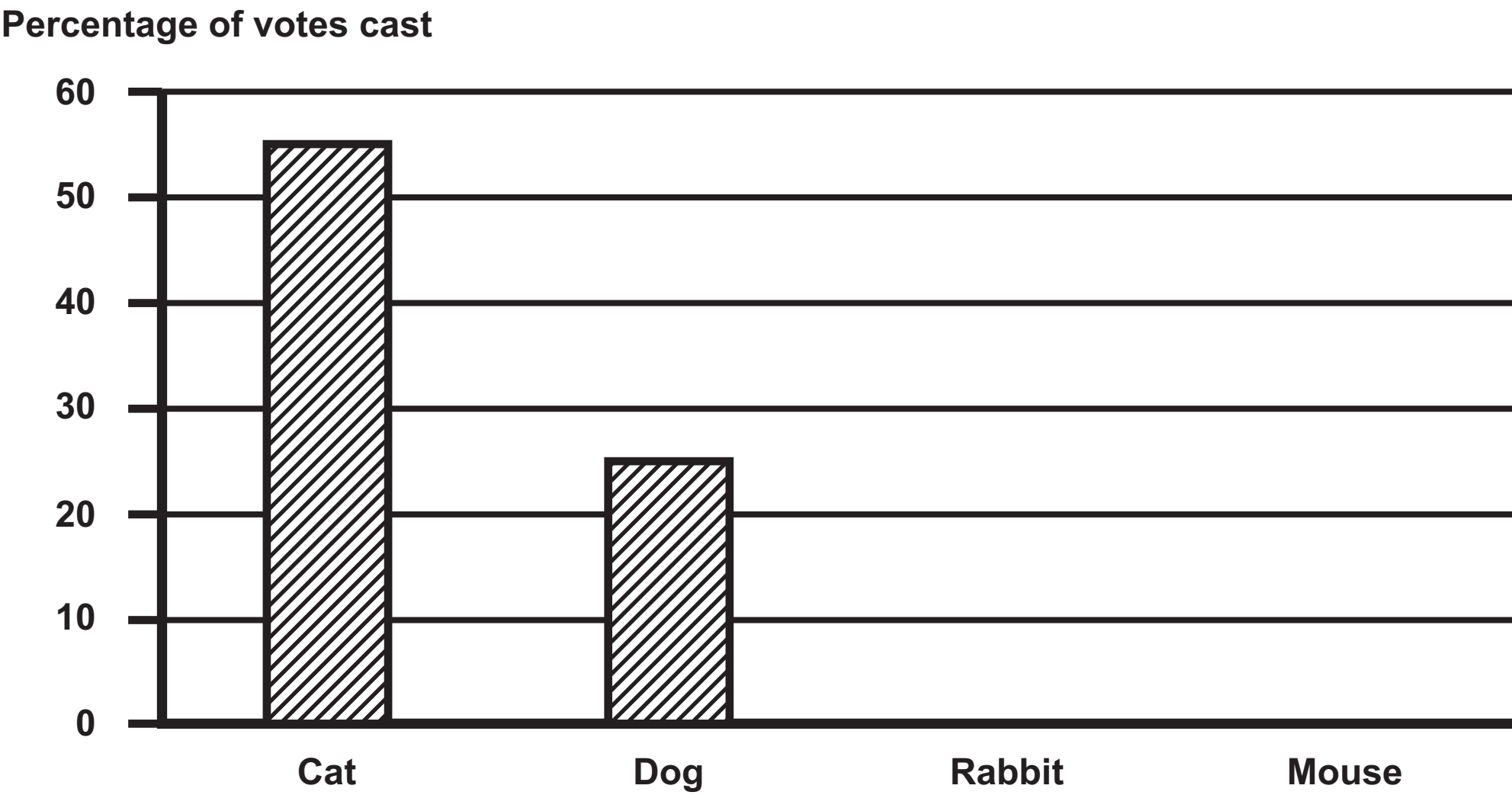
FIGURE 3

| ANIMAL | NUMBER OF VOTES | PERCENTAGE OF VOTES (%) |
|--------|-----------------|-------------------------|
| Cat    | 165             | 55                      |
| Dog    | 75              | 25                      |
| Rabbit | <hr/>           | 15                      |
| Mouse  | <hr/>           | 5                       |
| TOTAL  | 300             | 100                     |



Question 2(d)(ii)

FIGURE 4



**Question 5(a)**

**outline of the original design**

