

<b>Candidate forename</b>		<b>Candidate surname</b>	
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<b>Centre number</b>						<b>Candidate number</b>				
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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS  
GENERAL CERTIFICATE OF SECONDARY EDUCATION**

**A564**

**DESIGN AND TECHNOLOGY**

**RESISTANT MATERIALS**

**Technical aspects of designing and making**

**WEDNESDAY 25 MAY 2011: Afternoon**

**DURATION: 1 hour 15 minutes**

**SUITABLE FOR VISUALLY IMPAIRED CANDIDATES**

**Candidates answer on the question paper.**

**OCR SUPPLIED MATERIALS:**

**None**

**OTHER MATERIALS REQUIRED:**

**None**

**READ INSTRUCTIONS OVERLEAF**

## **INSTRUCTIONS TO CANDIDATES**

- **Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Read each question carefully. Make sure you know what you have to do before starting your answer.**
- **Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).**
- **Answer ALL the questions.**

## **INFORMATION FOR CANDIDATES**

- **The number of marks is given in brackets [ ] at the end of each question or part question.**
- **The total number of marks for this paper is 60.**
- **All dimensions are in millimetres.**
- **Your quality of written communication is assessed in questions marked with an asterisk (\*).**

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## SECTION A

Answer ALL questions.

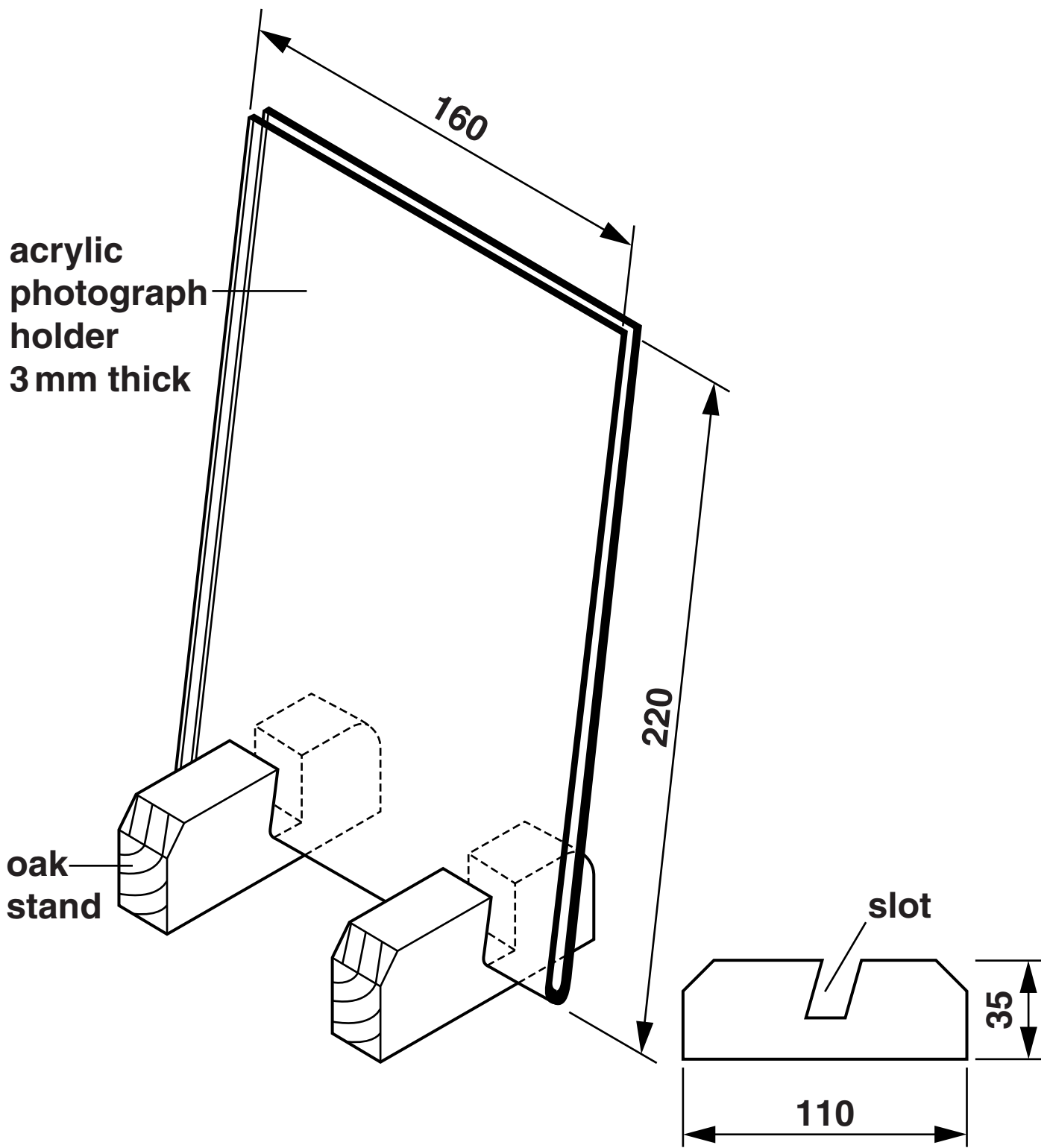
1 Fig. 1 opposite shows views of a photograph holder and stand.

The photograph holder is made from acrylic. The stand is made from oak.

(a) Complete the table by naming the tools used to make the slot in the oak stand.

STAGE	PROCESS	TOOLS
1	Mark out the slot	
2	Cut out the slot	
3	Make the bottom of the slot flat	

[3]



**Fig. 1**

**(b) Use sketches and notes to show how the photograph holder would be bent to shape from one piece of acrylic.**

**[3]**

**(c) Describe how the edges of the acrylic would be finished to a high quality shine.**

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**[2]**

**(d) Use sketches and notes to show how the design of the acrylic photograph holder could be modified to become freestanding. Include details of how the modified design could be made.**

**[4]**

**[Total: 12]**

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- 2 Fig. 2 shows an incomplete design for a wall-mounted kitchen roll holder.  
The metal rod is made from aluminium.

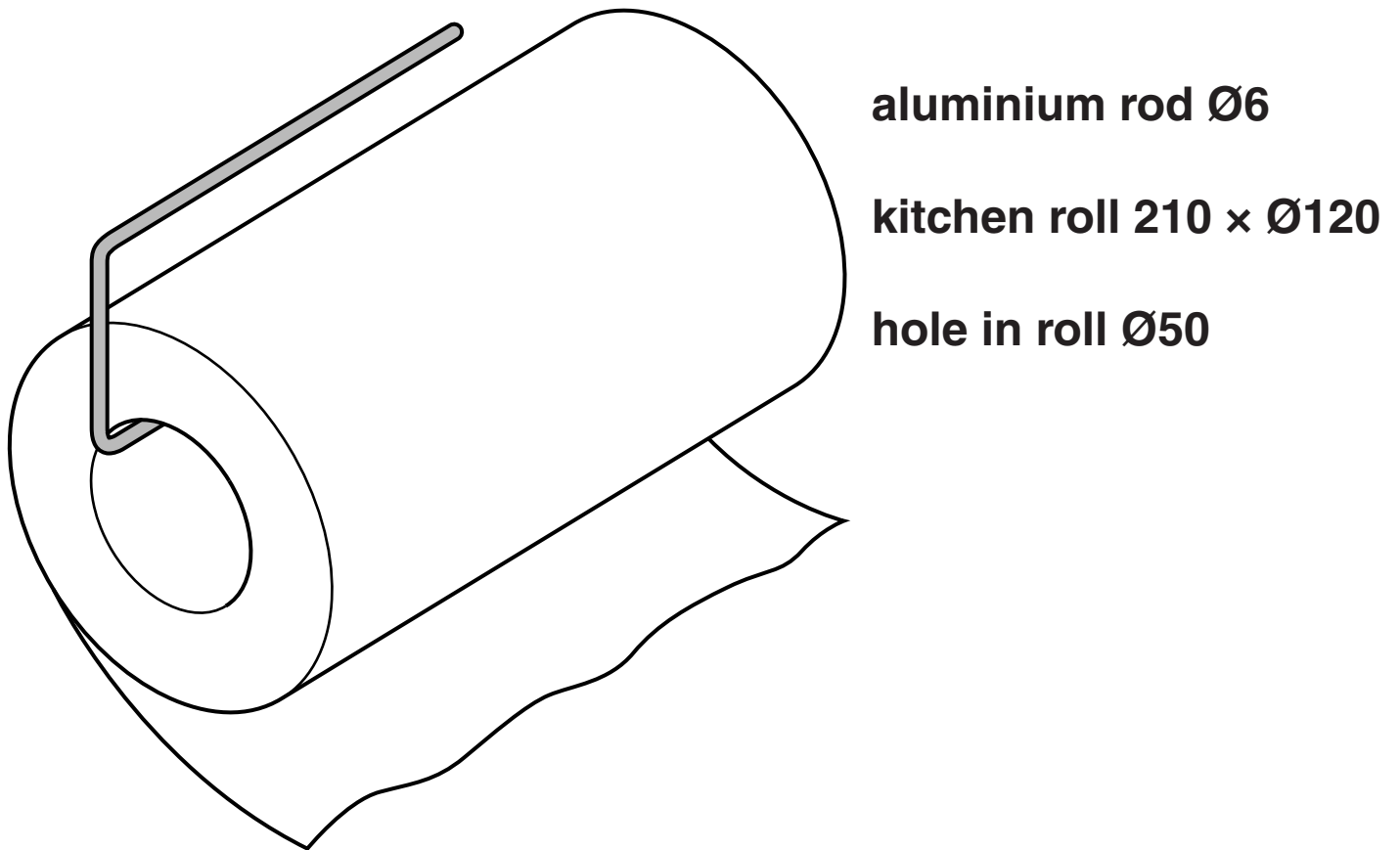


Fig. 2

- (a) The aluminium rod does not require an applied finish.  
Give ONE reason why the aluminium rod does not require an applied finish.

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[1]

**(b) Use sketches and notes to show how you would produce ONE of the bends in the aluminium rod.**

**[3]**

- (c) Use sketches and notes to complete the design of the kitchen roll holder so that it could be wall-mounted.  
Include details of materials and any fittings used.**

**[4]**

**(d) The aluminium rod could be replaced with stainless steel rod.  
Give TWO advantages of using stainless steel rather than aluminium for the kitchen roll holder.**

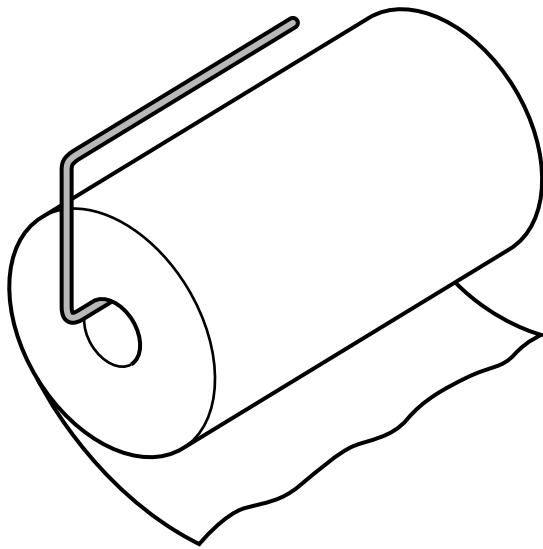
**1** \_\_\_\_\_

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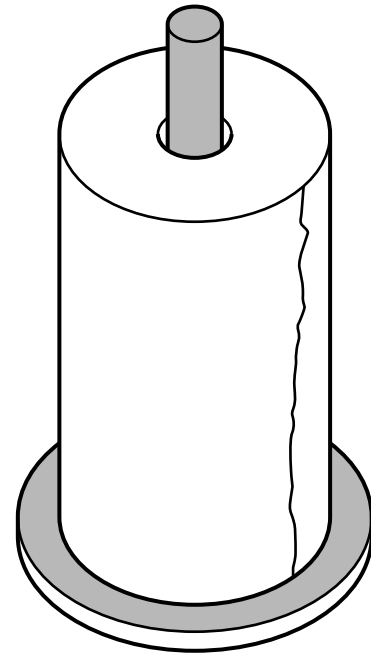
**2** \_\_\_\_\_

\_\_\_\_\_ **[2]**

(e) Fig. 3 shows two types of kitchen roll holder.



wall-mounted



freestanding

Fig. 3

Give TWO reasons why consumers may prefer to purchase a wall-mounted kitchen roll holder rather than a freestanding kitchen roll holder.

1 \_\_\_\_\_

\_\_\_\_\_

2 \_\_\_\_\_

\_\_\_\_\_ [2]

[Total: 12]

- 3 Fig. 4 shows details of a sit-on toy made mainly from plywood. The sit-on toy is supplied as a flat-pack for self-assembly.

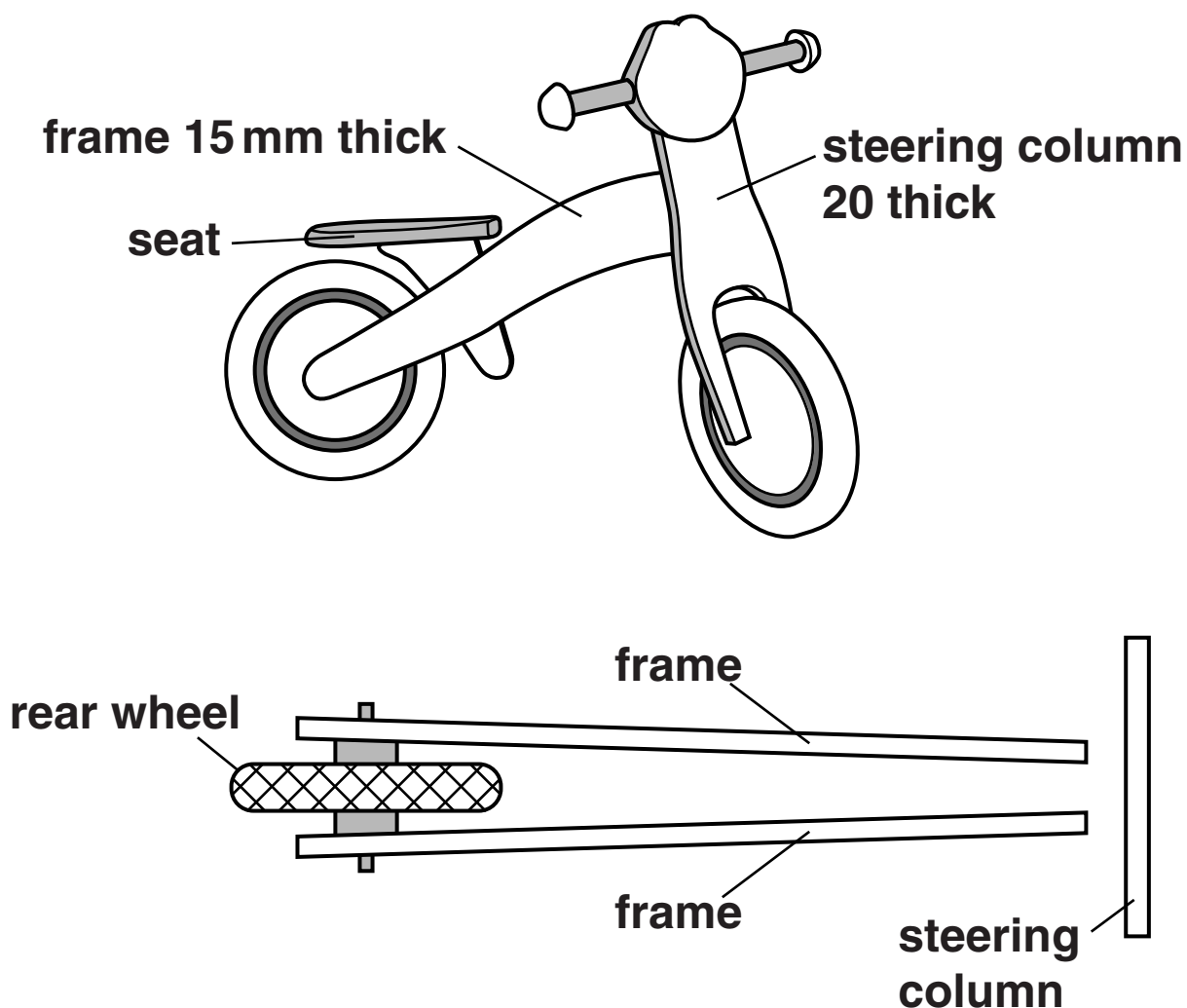


Fig. 4

- (a) Give ONE advantage, other than cost, of using plywood rather than solid wood for the sit-on toy.

\_\_\_\_\_ [1]

**(b) The toy is supplied as a flat-pack for self-assembly.**

**Use sketches and notes to show how the steering column could be joined to the frames to allow the toy to be steered.**

**Name the tools that will be needed by the consumer to join the steering column to the frames.**

**[5]**





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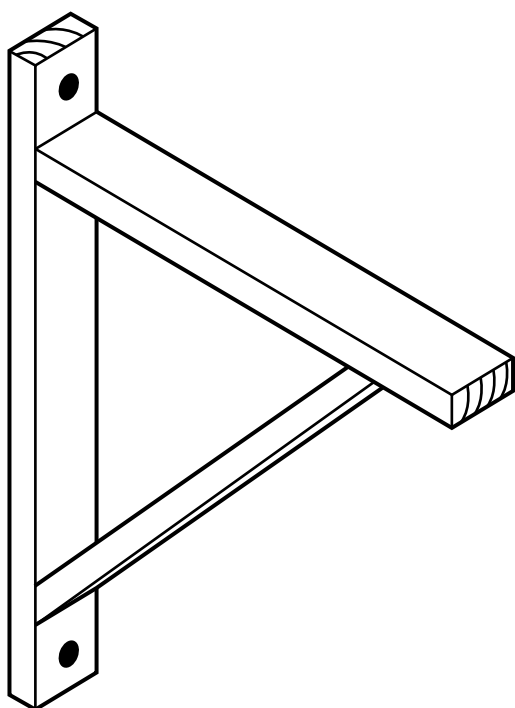
[6]

[Total: 12]

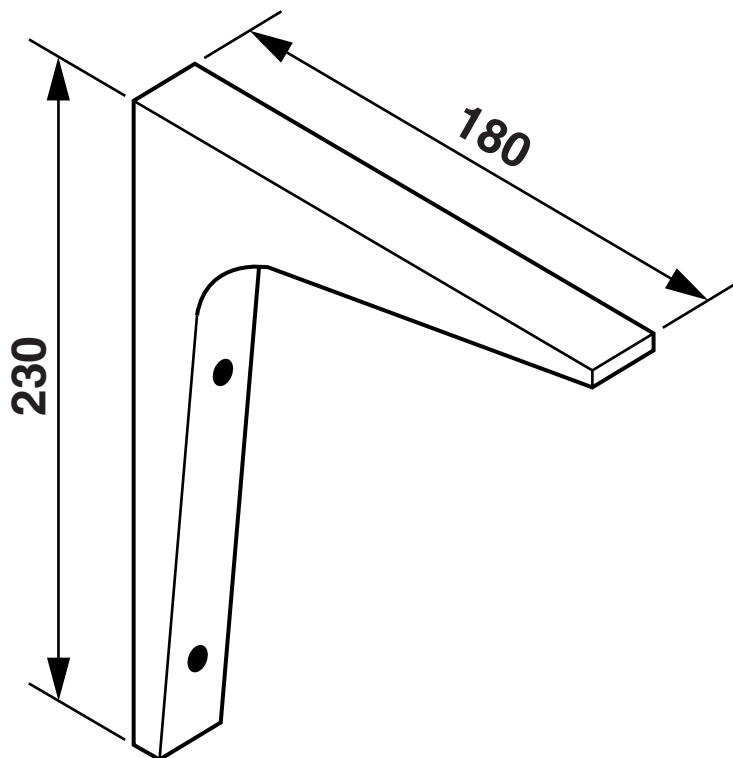
## SECTION B

Answer ALL questions.

- 4 Fig. 5 shows two different brackets that could be used to support a shelf.  
Both brackets are the same overall size.



**bracket A**  
fabricated  
from solid wood



**bracket B**  
moulded plastic

**Fig. 5**

- (a) (i) State ONE quality control check that would be carried out during the manufacture of bracket A.**

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[1]

- (ii) Describe HOW the quality control check would be carried out.**

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[1]

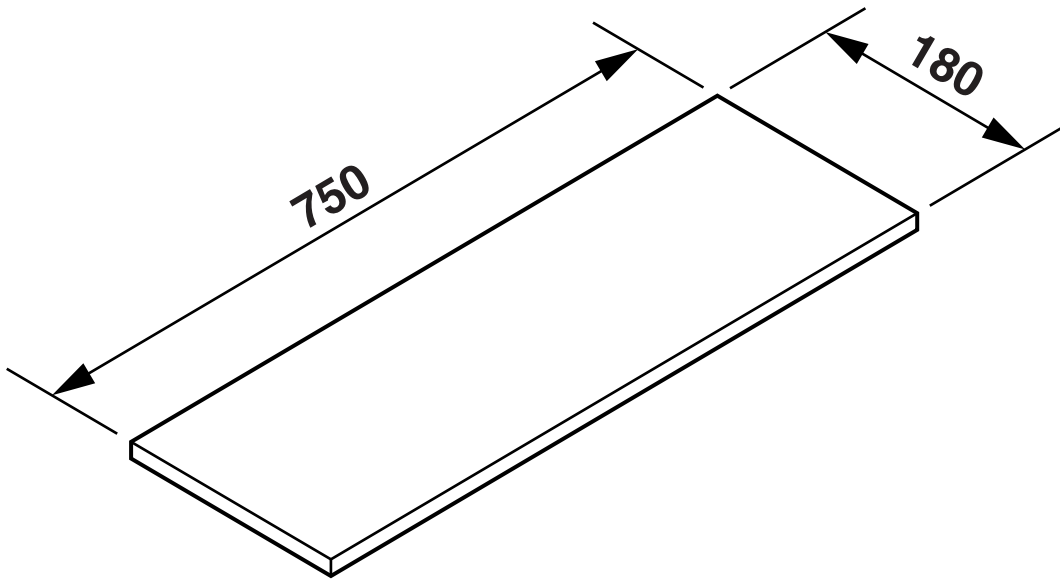
- (iii) State clearly the stage at which the quality control check would be carried out during manufacture.**

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[1]

- (b) Fig. 6 shows a shelf made from 15 mm thick manufactured board. The shelf will be supported by two of the moulded plastic brackets B.



**Fig. 6**

**Use sketches and notes to show how the design of the moulded plastic bracket B could be modified so that the shelf is supported securely without the use of pre-manufactured components. The shelf MUST NOT be modified.**

**[3]**

**(c\*) Both brackets will be produced in quantity.  
Compare the manufacturing methods of BOTH  
brackets and decide which of the two brackets  
would be the more efficient to produce in quantity.**

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[6]

**[Total: 12]**

5 Fig. 7 shows an incomplete design for a table that could be used while watching TV.

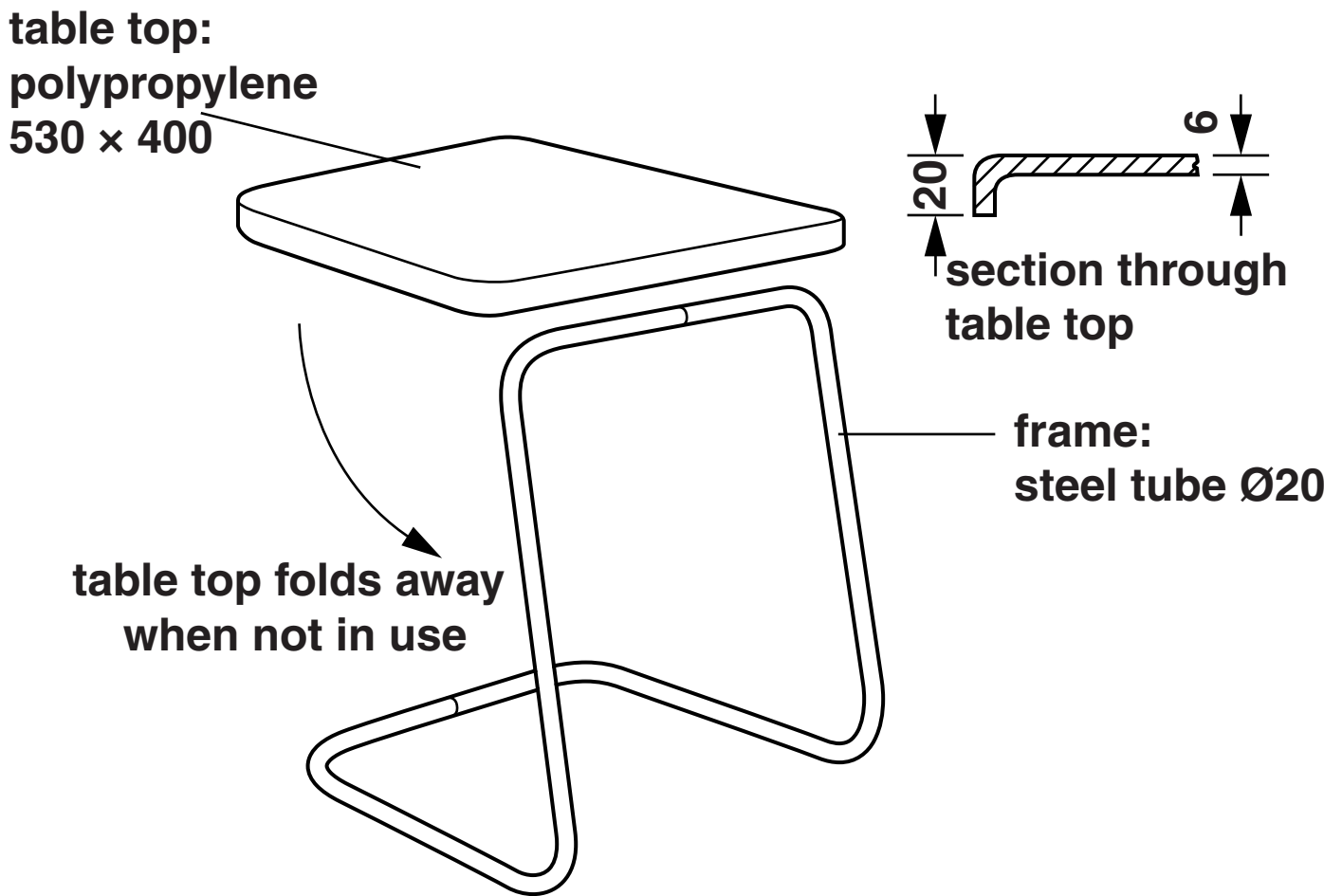


Fig. 7

(a) Give TWO advantages of using polypropylene for the table top rather than a wood-based material.

1 \_\_\_\_\_

\_\_\_\_\_

2 \_\_\_\_\_

\_\_\_\_\_

[2]



**(b) Use sketches and notes to show how the design of the frame could be modified so that the height of the table top could be adjusted and locked at different heights.**

**[4]**

- (c) The table top folds away when not in use.  
Use sketches and notes to show modifications to the frame and table top so that the table top can be:**
- **locked in a horizontal position when in use;**
  - **folded away when not in use.**

**[6]**

**[Total: 12]**

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