

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
General Certificate of Secondary Education
MATHEMATICS SYLLABUS A

1962/1

PAPER 1 (Foundation Tier)

Tuesday **7 JUNE 2005** Afternoon 1 hour 30 minutes

Candidates answer on the question paper.

Additional materials:

Geometrical instruments

Tracing paper (optional)

| Candidate Name | Centre Number | Candidate Number | | | | | | | | | | | | |
|----------------|--|------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px;"></td> </tr> </table> | | | | | | | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px;"></td> <td style="width: 15px; height: 15px;"></td> </tr> </table> | | | | | | |
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TIME 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

- Write your name in the space above.
- Write your Centre number and Candidate number in the boxes above.
- Answer **all** the questions.
- Write your answers, in blue or black ink, in the spaces provided on the question paper.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- Show your working. Marks may be given for working that shows that you know how to solve the problem even if you get the answer wrong.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.



WARNING

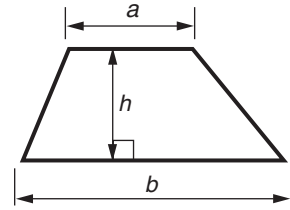
You are not allowed to use a calculator in this paper.

FOR EXAMINER'S USE

This question paper consists of 21 printed pages and 3 blank pages.

Formulae Sheet: Foundation Tier

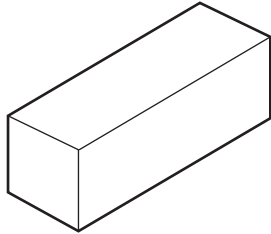
$$\text{Area of trapezium} = \frac{1}{2}(a + b)h$$



1 From the names below, pick the correct one for each diagram.

| | | |
|------------------|----------------------|-----------------------|
| Triangular prism | Square based pyramid | Cylinder |
| Cube | Isosceles triangle | Trapezium |
| Parallelogram | Cuboid | Right angled triangle |

(a)



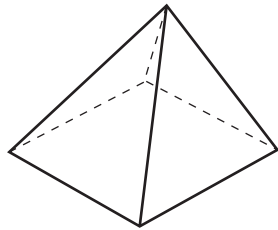
(a) _____ [1]

(b)



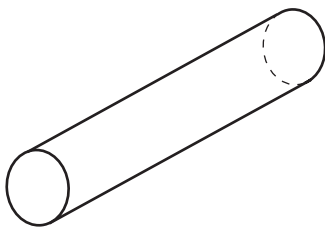
(b) _____ [1]

(c)



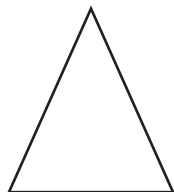
(c) _____ [1]

(d)



(d) _____ [1]

(e)



(e) _____ [1]

2 (a) Write two thousand three hundred and five in figures.

(a) _____ [1]

(b) Write 4027 in words.

_____ [1]

(c) Make the largest number that you can from the digits 1, 3, 7, 2, using each only once.

(c) _____ [1]

(d) Write 3627

(i) to the nearest 10,

(d)(i) _____ [1]

(ii) to the nearest 100.

(ii) _____ [1]

(e) Work out.

(i) $346 + 129$

.....
.....
.....

(e)(i) _____ [1]

(ii) $410 - 134$

.....
.....
.....

(ii) _____ [1]

- 3 Here are the marks scored in a test.

| NAME | | | | | |
|----------|---|--|--|--|--|
| Amir | 3 | | | | |
| Carol | 3 | | | | |
| Claire | 4 | | | | |
| Daniel | 9 | | | | |
| Fiona | 6 | | | | |
| Frances | 8 | | | | |
| George | 5 | | | | |
| James | 2 | | | | |
| Michelle | 6 | | | | |
| Naomi | 1 | | | | |
| Oliver | 3 | | | | |
| Paulo | 3 | | | | |
| Sophie | 3 | | | | |
| Terri | 7 | | | | |
| Winston | 7 | | | | |

For these marks, find

- (a) the mode,

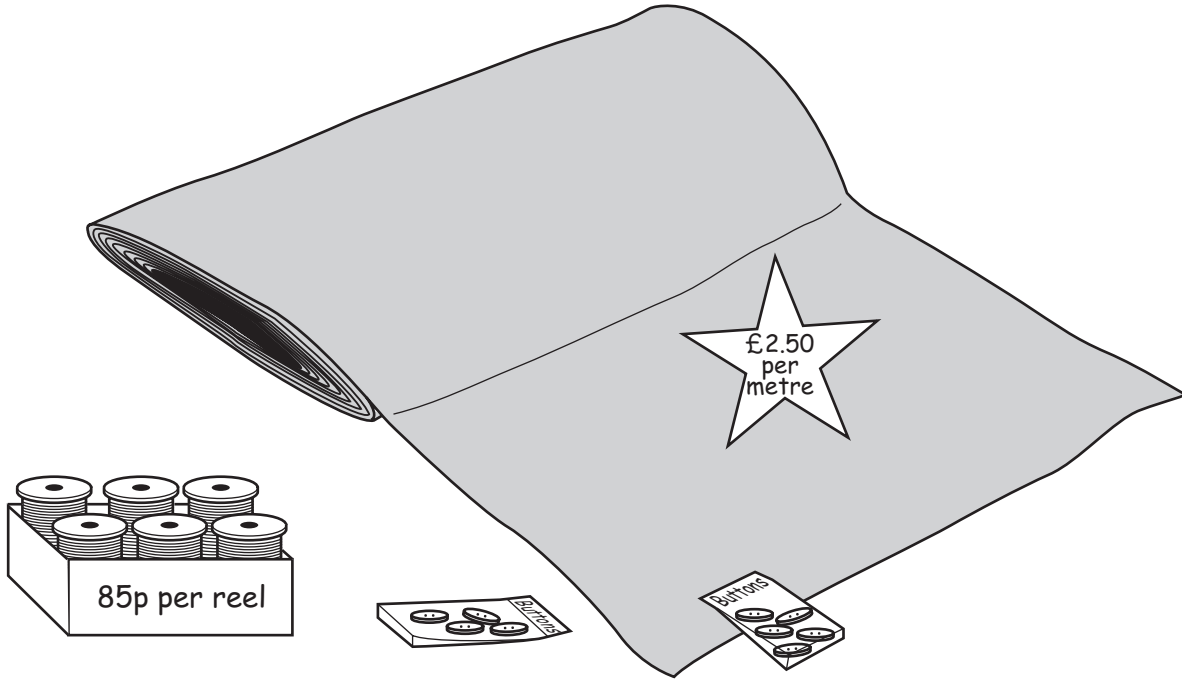
.....

(a) _____ [1]

- (b) the median.

.....

(b) _____ [2]



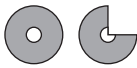





Sophie went to a shop to buy some items for a sewing project.
Her bill is shown below.
Fill in the four missing amounts.

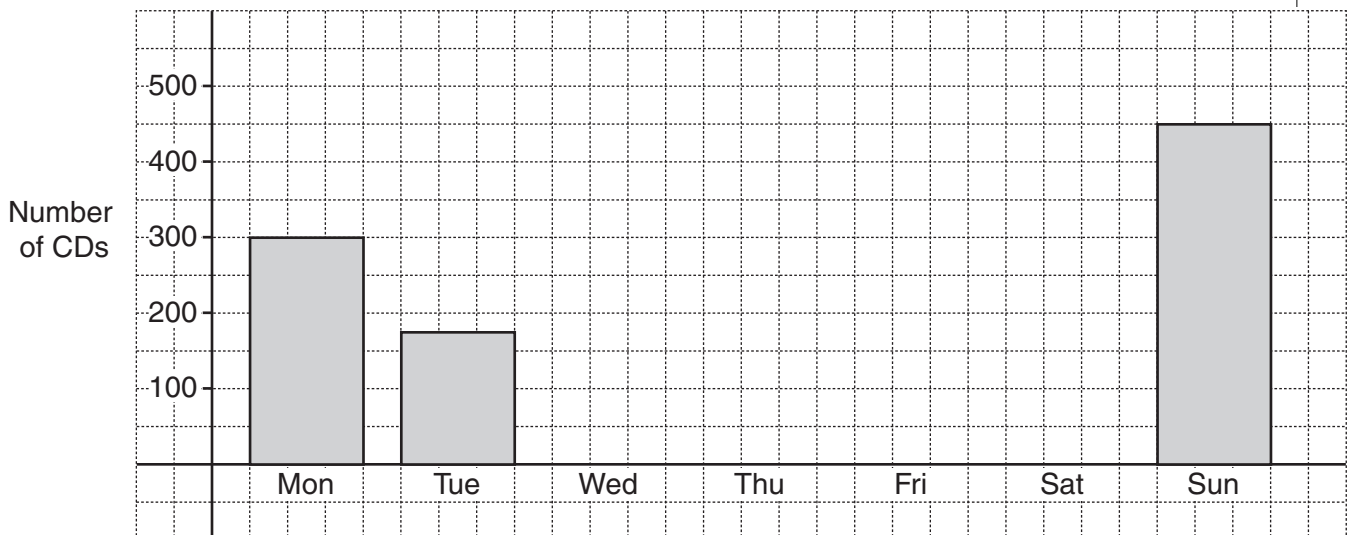
| | |
|---|--------|
| 4 metres of material at £2.50 per metre. | _____ |
| 3 packets of buttons at _____ per packet. | £ 0.75 |
| 2 reels of thread at 85p per reel. | _____ |
| TOTAL | _____ |

.....
.....
.....
.....[5]

- 5 'Music Now' sells CDs on the internet.
The table shows last week's sales.

| MUSIC NOW | |  represents 100 CDs |
|------------------|---|--|
| Monday |  | 300 |
| Tuesday |  | 175 |
| Wednesday |  | |
| Thursday |  | |
| Friday | | 225 |
| Saturday | | 500 |
| Sunday |  | 450 |

- (a) In the table, enter the number of CDs sold on Wednesday and on Thursday. [2]
- (b) Complete the table by drawing symbols to show the sales on Friday and on Saturday. [2]
- (c) Complete the bar chart to illustrate the information shown in the table.



[2]

6 (a) Here is a sequence of patterns.

Pattern 1

Pattern 2

Pattern 3

Pattern 4



(i) Draw **Pattern 4** in the space above.

[1]

(ii) Complete this table.

| | | | | | |
|-----------------------|---|---|----|---|---|
| Pattern | 1 | 2 | 3 | 4 | 5 |
| Number of dots | 5 | 9 | 13 | | |

[1]

(iii) Susie works out that the number of dots in **Pattern 10** is 45 because it is five times the number of dots in **Pattern 2**.

Explain why she is wrong.

[1]

(b) I multiply a number by 4 and then add 1. The answer is 33.
What number did I start with?

.....

.....

(b) _____ [2]

- 7 The table shows the temperatures, on one day, at midday and midnight in 5 cities.

| City | Temperature(°C) at midday | Temperature(°C) at midnight |
|----------|-------------------------------------|---------------------------------------|
| New York | 7 | -5 |
| Paris | 6 | -1 |
| Glasgow | 2 | -4 |
| Moscow | -6 | -16 |
| London | -1 | -5 |

- (a) What was the difference in temperature between New York and Moscow at **midday**?

.....

(a) _____ [1]

- (b) What was the difference in temperature between Moscow and Glasgow at **midnight**?

.....

(b) _____ [1]

- (c) Which city had the greatest fall in temperature between midday and midnight?

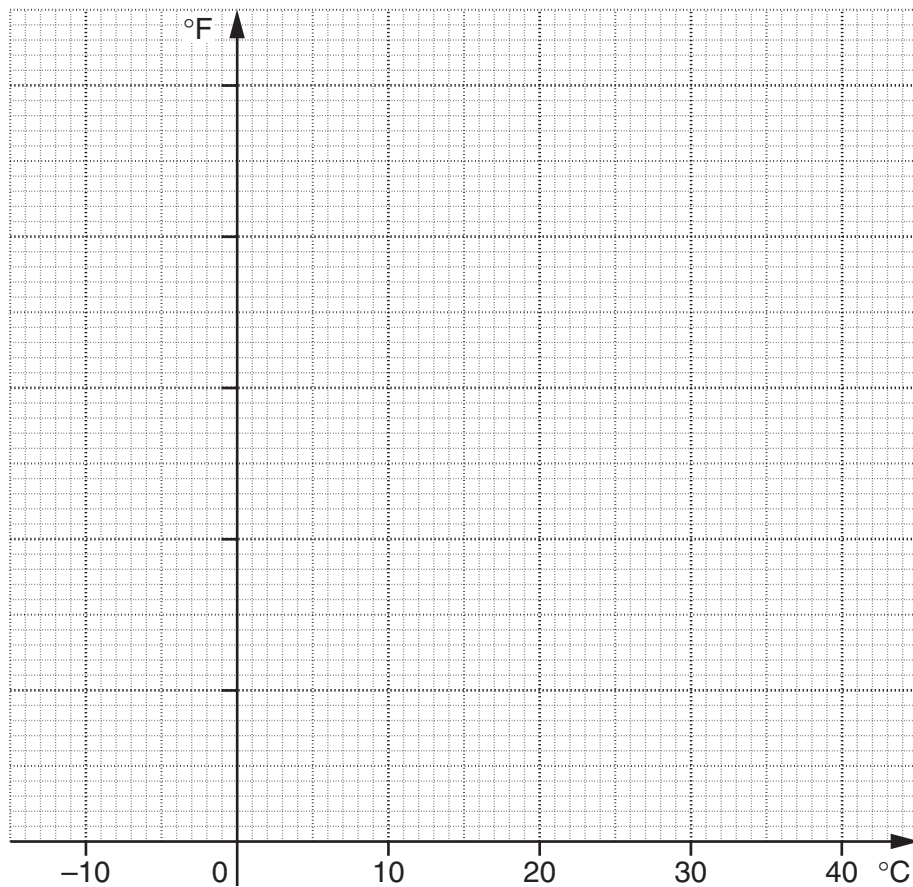
.....

(c) _____ [1]

- 8 The table below shows temperatures written in both degrees Celsius ($^{\circ}\text{C}$) and degrees Fahrenheit ($^{\circ}\text{F}$).

| TEMPERATURE | | | |
|--------------------|-----|----|----|
| $^{\circ}\text{C}$ | -10 | 10 | 30 |
| $^{\circ}\text{F}$ | 14 | 50 | 86 |

- (a) Use the information in the table to draw a graph to convert degrees Celsius into degrees Fahrenheit.
You need to write the scale on the Fahrenheit axis.



[3]

- (b) Use your graph to change 20°C into degrees Fahrenheit.

(b) _____ $^{\circ}\text{F}$ [1]

9



Bill and Fiona are putting pens into packets.
Each packet holds 6 pens.

- (a) Bill has filled 16 packets.
How many pens has he used to fill them?

.....

.....

(a) _____ [2]

- (b) Fiona has 132 pens.
How many packets can she fill?

.....

.....

(b) _____ [2]

- 10 (a) A box of Daisy Jellies costs £1.22.
Petra buys 2 boxes of Daisy Jellies and pays with a £5 note.
How much change should she get?

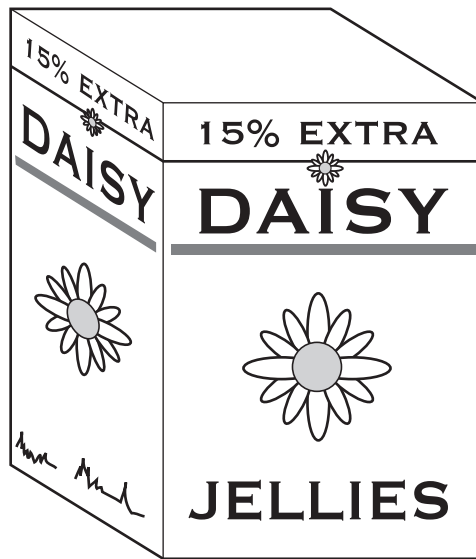
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(a) £ _____ [2]

(b)



A normal box contains 40 sweets.
A special offer box contains 15% more sweets.
Work out how many sweets there are in a special offer box.

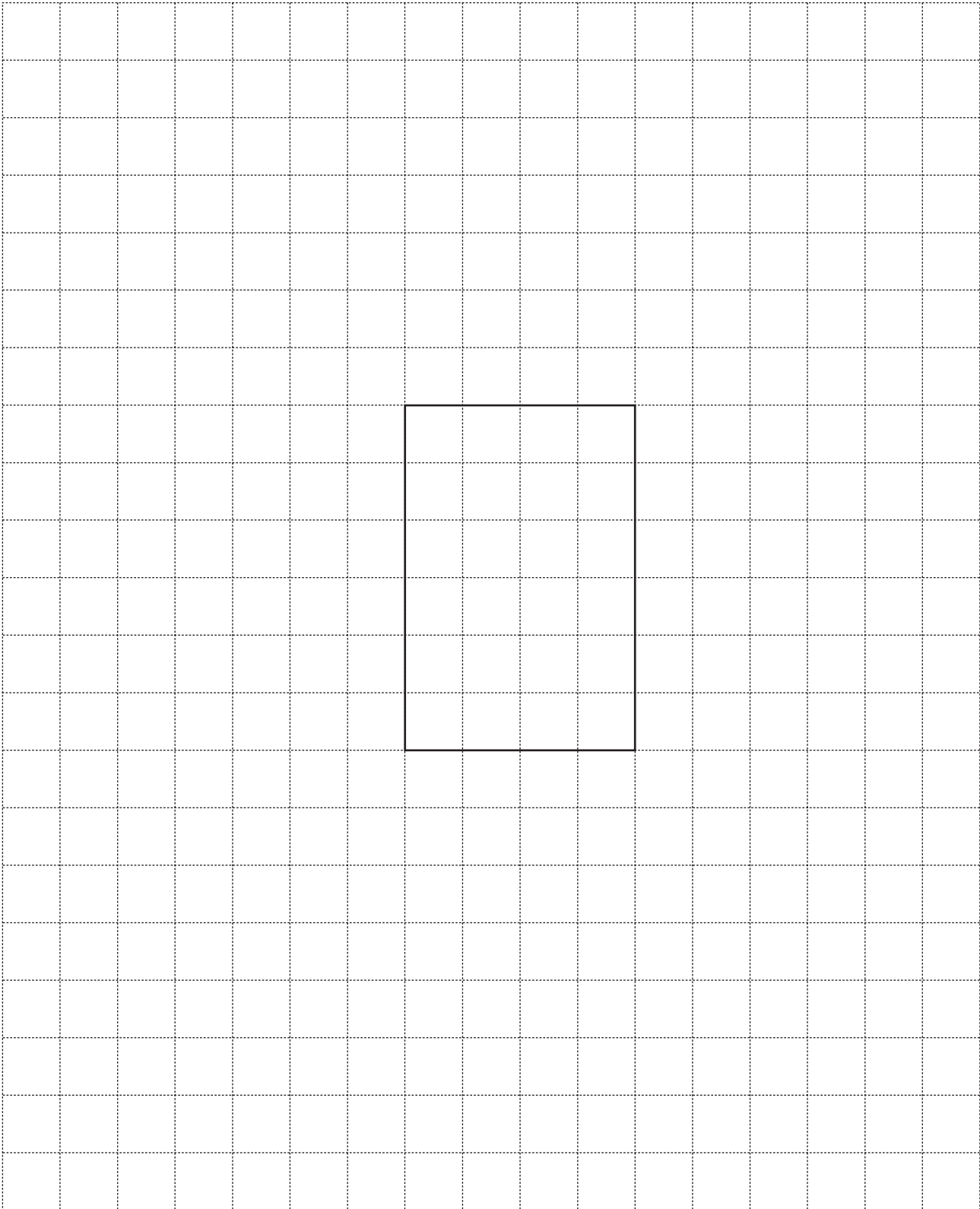
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(b) _____ [2]

- (c) A special offer box of Daisy Jellies measures 6 cm by 4 cm by 3 cm.
On the grid below, draw a net that could be used to make the box.
The front of the box has been drawn for you.



[3]

11 Work out.

(a) 2^3

.....

(a) _____ [1]

(b) -2×-4

(b) _____ [1]

(c) 0.8×0.2

.....

(c) _____ [1]

12 (a) Simplify.

(i) $5p + 7s + 4p - 3s$

.....

(a)(i) _____ [2]

(ii) $f \times f \times f \times f$

(ii) _____ [1]

(b) Solve.

$$\frac{x}{3} = 6$$

.....

(b) _____ [1]

13 (a) Write down a multiple of 9.

(a) _____ [1]

(b) (i) Explain why 5 is a factor of 30.

_____ [1]

(ii) Explain why 6 squared is 36.

_____ [1]

(c) Which **whole number** is nearest to $\sqrt{62}$?
Explain how you obtained your answer.

_____ because _____
_____ [2]

14 Solve.

(a) (i) $3x + 5 = 17$

.....
.....
(a)(i) _____ [2]

(ii) $2x - 3 = 10$

.....
.....
(ii) _____ [2]

(b) Factorise.

(i) $5a - 10$

.....
(b)(i) _____ [1]

(ii) $t^2 + 4t$

.....
(ii) _____ [1]

- 15 Some people were surveyed about washing clothes.
They all used both a detergent and a separate fabric conditioner.

Detergent was used in tablet, powder or liquid form.
Fabric conditioner was used in tablet or liquid form.

- (a) Complete the table below to show the different possible combinations of detergent and fabric conditioner used.

| | | | | |
|--------------------|------------|------------|------------|------------|
| | | | Detergent | |
| | | Tablet (T) | Powder (P) | Liquid (L) |
| Fabric Conditioner | Tablet (T) | | T, P | |
| | Liquid (L) | | | |

[2]

- (b) (i) One of the people in the survey is chosen at random.

Complete the table below to show the probability of that person using liquid detergent.

| | | | | |
|-------------|-----|-----------|--------|--------|
| | | Detergent | | |
| | | Tablet | Powder | Liquid |
| Probability | 0.6 | 0.25 | | |

.....[2]

- (ii) There were 200 people in the survey.

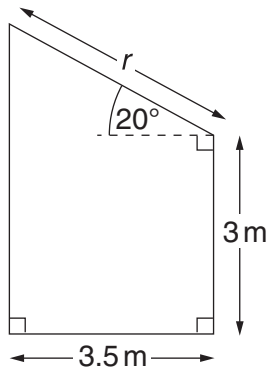
How many of them might you expect to use a **tablet** detergent?

.....
.....

(ii) _____ [2]

16 The diagram shows the side view of a building.

NOT TO
SCALE



(a) Using a scale of 2 cm to represent 1 m, make an accurate drawing of the side view of the building.

[4]

(b) Use your scale drawing to find the **real** length r .

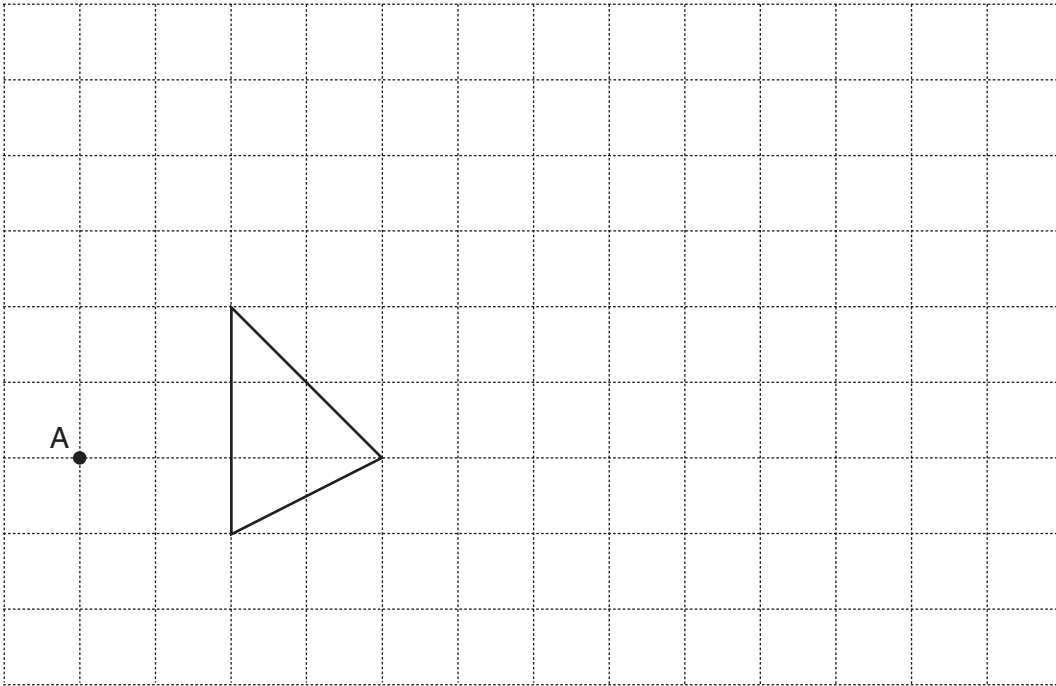
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.....

(b) _____ m [2]

- 17 (a) Enlarge the triangle by scale factor 2.
Use point A as the centre of enlargement.



[3]

- (b) Draw in all the lines of symmetry for this shape.



[2]

18 The cash price of a car is £6000.
Joseph bought this car on credit.
The credit terms were:

- Deposit of £250
- 12 payments of £600



(a) How much more than the cash price was the credit price?

.....

.....

.....

.....

.....

(a) £ _____ [4]

(b) When Joseph sold the car, its value had gone down by 30%.
The car was originally worth £6000.
How much did he sell it for?

.....

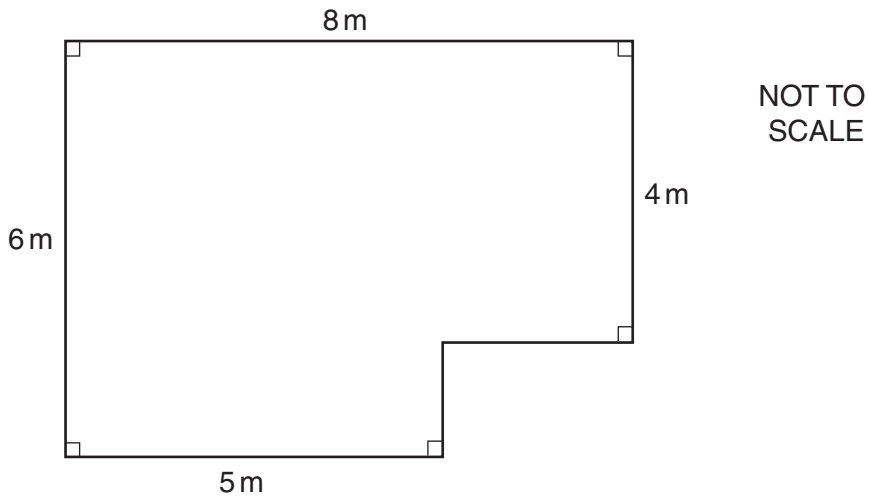
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.....

(b) £ _____ [3]

19 The diagram below shows the plan of a classroom.



Work out the perimeter and area of the classroom floor.

.....

.....

.....

.....

.....

.....

.....

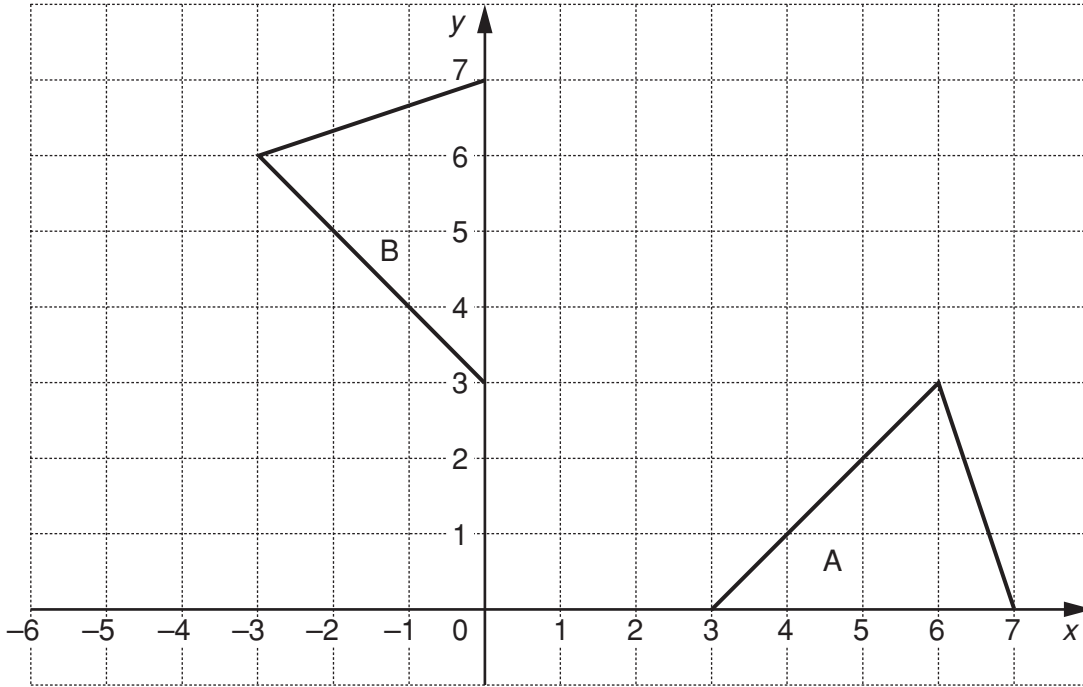
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Perimeter = _____ m

Area = _____ m² [4]

20



(a) Describe fully the **single** transformation that maps triangle A onto triangle B.

[3]

(b) Work out the area of triangle A.

.....

.....

(b) _____ cm² [2]

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