Rewarding Learning

71

Candidate Number

General Certificate of Secondary Education
January 2011

Mathematics

Module N2 Paper 2
(With calculator)
Foundation Tier

[GMN22]

TUESDAY 11 JANUARY

10.30 am – 11.15 am

GMN22

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
Total Marks	

TIME

45 minutes.

INSTRUCTIONS TO CANDIDATES

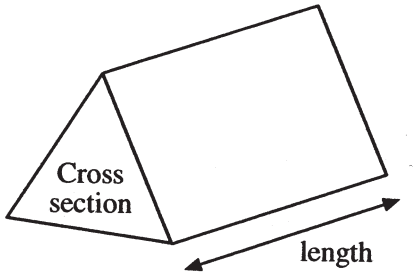
Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Write your answers in the spaces provided in this question paper.
Answer **all fourteen** questions.
Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 44.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
You should have a calculator, ruler, compasses, set-square and protractor.
The Formula Sheet is on page 2.

Formula Sheet

Volume of prism = area of cross section × length



1

VANZ-TO-GO

Van hire charges

£52 per day

plus

19p per mile

Bob hires a van for two days.

When he returns it the total hire charge is £137.06

How many miles did he drive it for?

Answer _____ miles [3]

Examiner Only	
Marks	Remark

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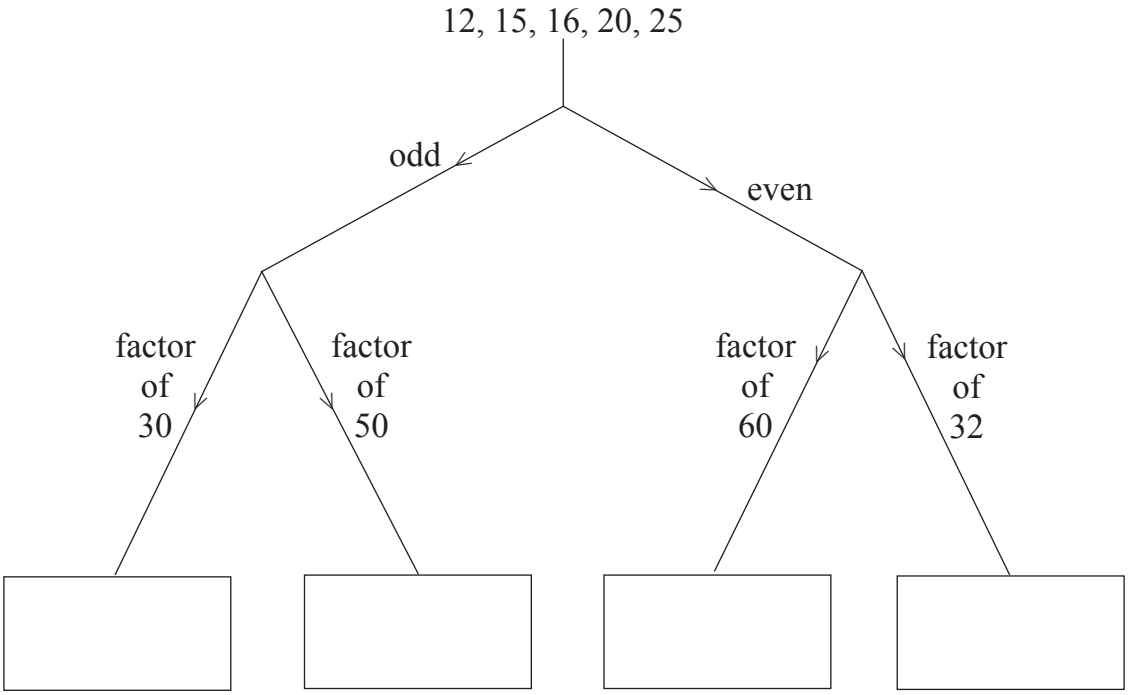
2 Simplify $\dfrac{10-3a+2-5a}{2}$

Answer _____ [3]

3 Using the decision tree, sort these numbers into the correct boxes.

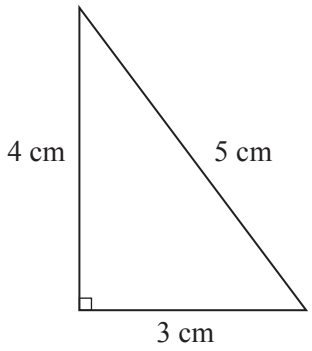


[2]

Examiner Only	
Marks	Remark

Examiner Only	
Marks	Remark

4 **(a)** A right-angled triangle has sides of 3 cm, 4 cm and 5 cm.



On the grid below show how two of these triangles can be put together to make a parallelogram.

[2]

(b) Calculate angle t in the triangle below.

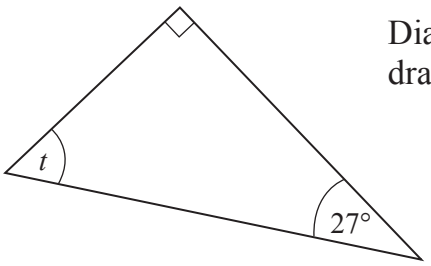


Diagram not drawn accurately

Answer _____ ° [2]

Examiner Only	
Marks	Remark

5 **(a)** Evaluate $\sqrt{5.76} + 3.5^2$

Answer _____ [1]

(b) Which of the following fractions is nearest to $\frac{3}{4}$?

Show your working.

$$\frac{7}{10}, \quad \frac{17}{20}, \quad \frac{23}{30}, \quad \frac{29}{40}$$

Answer _____ [2]

---

6 The stem and leaf diagram shows a list of temperatures.

2	2	3	6	8	9	
3	0	2	4	5	6	7
4	1	1				

Key $4 \mid 1 = 41\,°C$

Write down

(a) the range,

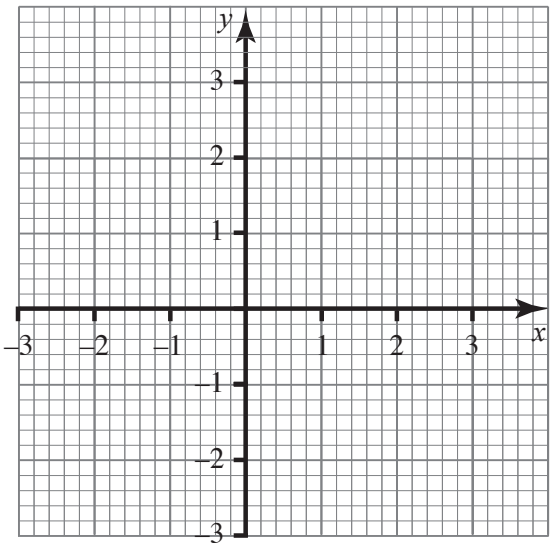
Answer _____ °C [1]

(b) the median.

Answer _____ °C [1]

Examiner Only	
Marks	Remark

7 Draw the graph of $y = 2x - 1$



[3]

8 James is designing a questionnaire to test the idea that

"the amount of sleep you need changes with age".

(a) One of his questions will find out the ages of those being questioned.

Write a suitable question he could ask, with response boxes for people to tick.

[2]

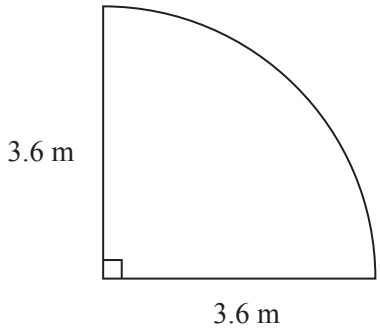
Having completed his questionnaire James decided to give it out to all his school friends and their parents.

(b) Give one reason why this is not a good sample.

Answer _____

_____ [1]

9 Calculate the perimeter of the garden shown below.



Answer _____ [4]

10 **(a)** A packet of porridge oats contains 660 g.

A special offer packet contains an extra 15%.

How many grams of porridge oats are in the special offer packet?

Answer _____ g [3]

(b) Richard bought a games console for £240

Two years later he sold it for £150

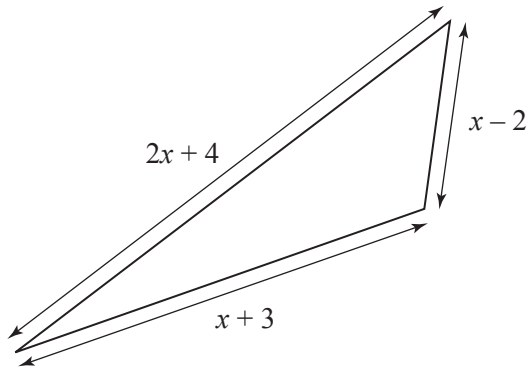
Work out his percentage loss.

Answer _____ % [3]

Examiner Only

Marks	Remark

11 **(a)** Write an expression, in terms of x, for the perimeter of the triangle shown. Give your answer in its simplest form.



Answer _____ [2]

(b) The perimeter of this triangle is 29 cm.

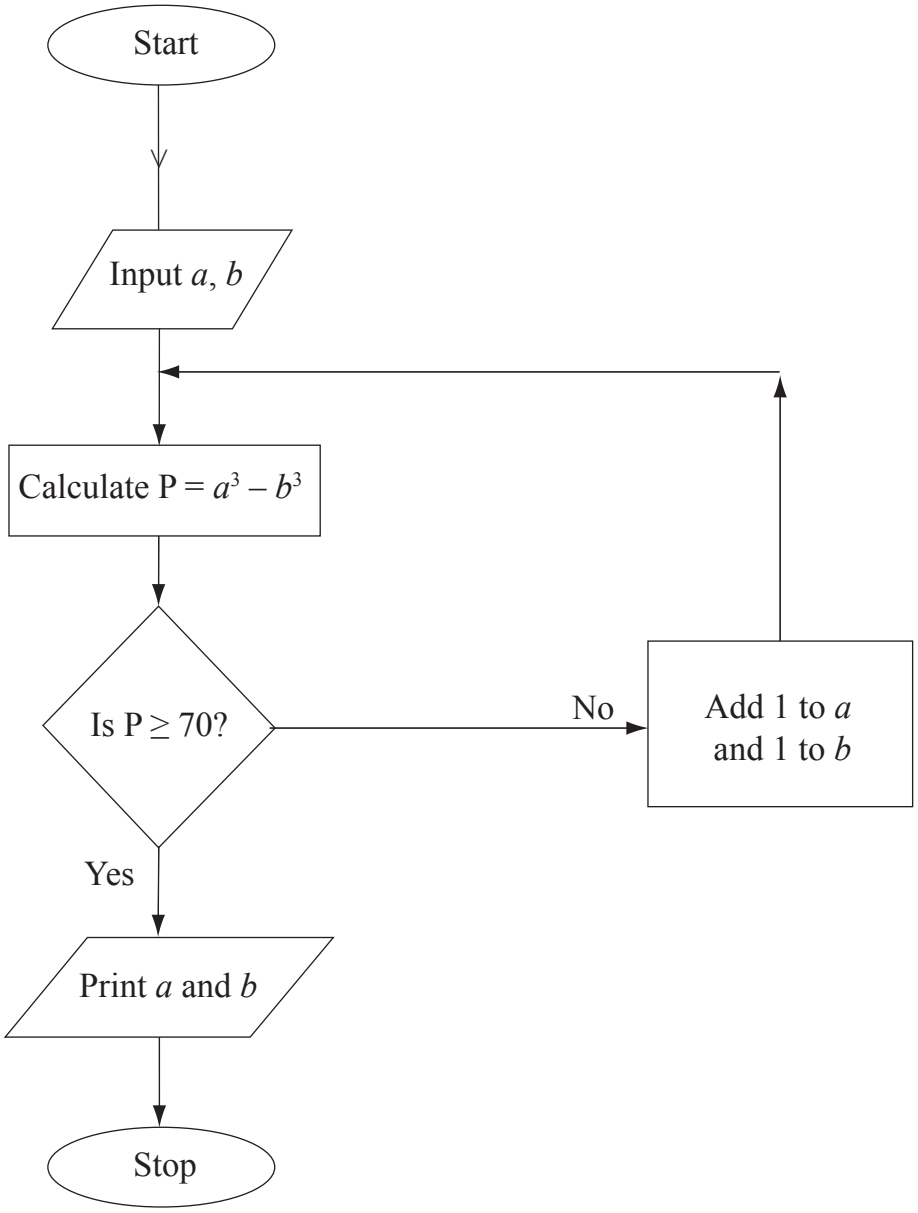
Write down an equation for the perimeter in terms of x and solve it to find x.

Answer x = _____ [2]

Examiner Only

Marks	Remark

12



Starting with $a = 2$, $b = 1$ use the flow chart to find the values printed.

a	b	P
2	1	

Answer $a =$ _____, $b =$ _____ [3]

Examiner Only

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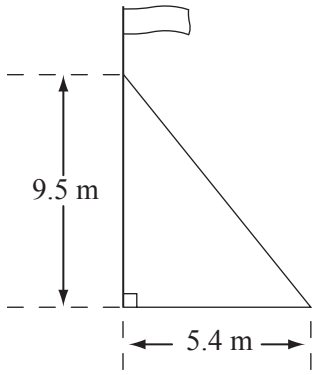
13 A flagpole is held vertically by a wire fixed to a point 9.5 m above the horizontal ground and to a point on the ground 5.4 m from the pole.



Calculate the length of the wire.

Answer _____ m [3]

14 Write down the *n*th term for the sequence

6, 12, 18, 24, ...

Answer _____ [1]

THIS IS THE END OF THE QUESTION PAPER

Examiner Only

Marks	Remark