FOR OFFICIAL USE

Total Mark

NATIONAL QUALIFICATIONS 2013

MATHEMATICS
INTERMEDIATE 1
Units 1, 2 and 3
Paper 1 (Non-calculator)

WEDNESDAY, 22 MAY 9.00 AM – 9.35 AM

X1001001

X100/10/01

Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Number of seat

Date of birth
Day Month Year

Scottish candidate number

1 **You may NOT use a calculator.**

2 Write your working and answers in the spaces provided. Additional space is provided at the end of this question-answer book for use if required. If you use this space, write clearly the number of the question involved.

3 Full credit will be given only where the solution contains appropriate working.

4 Before leaving the examination room you must give this book to the Invigilator. If you do not you may lose all the marks for this paper.

Use blue or black ink. Pencil may be used for graphs and diagrams only.

SQA ©

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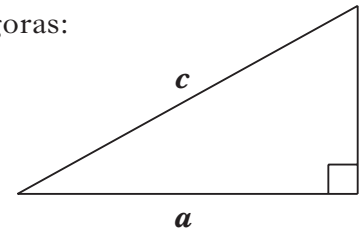
FORMULAE LIST

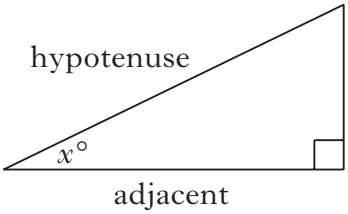
Circumference of a circle: $C = \pi d$
Area of a circle: $A = \pi r^2$

Theorem of Pythagoras:



$a^2 + b^2 = c^2$

Trigonometric ratios in a right angled triangle:



$$\tan x^\circ = \frac{\text{opposite}}{\text{adjacent}}$$

$$\sin x^\circ = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos x^\circ = \frac{\text{adjacent}}{\text{hypotenuse}}$$

DO NOT WRITE IN THIS MARGIN

Marks

All questions should be attempted.

1. (*a*) Find 16·7 + 5·83.

1

(*b*) Find 9 × 2·13.

1

(*c*) Find 70% of 340.

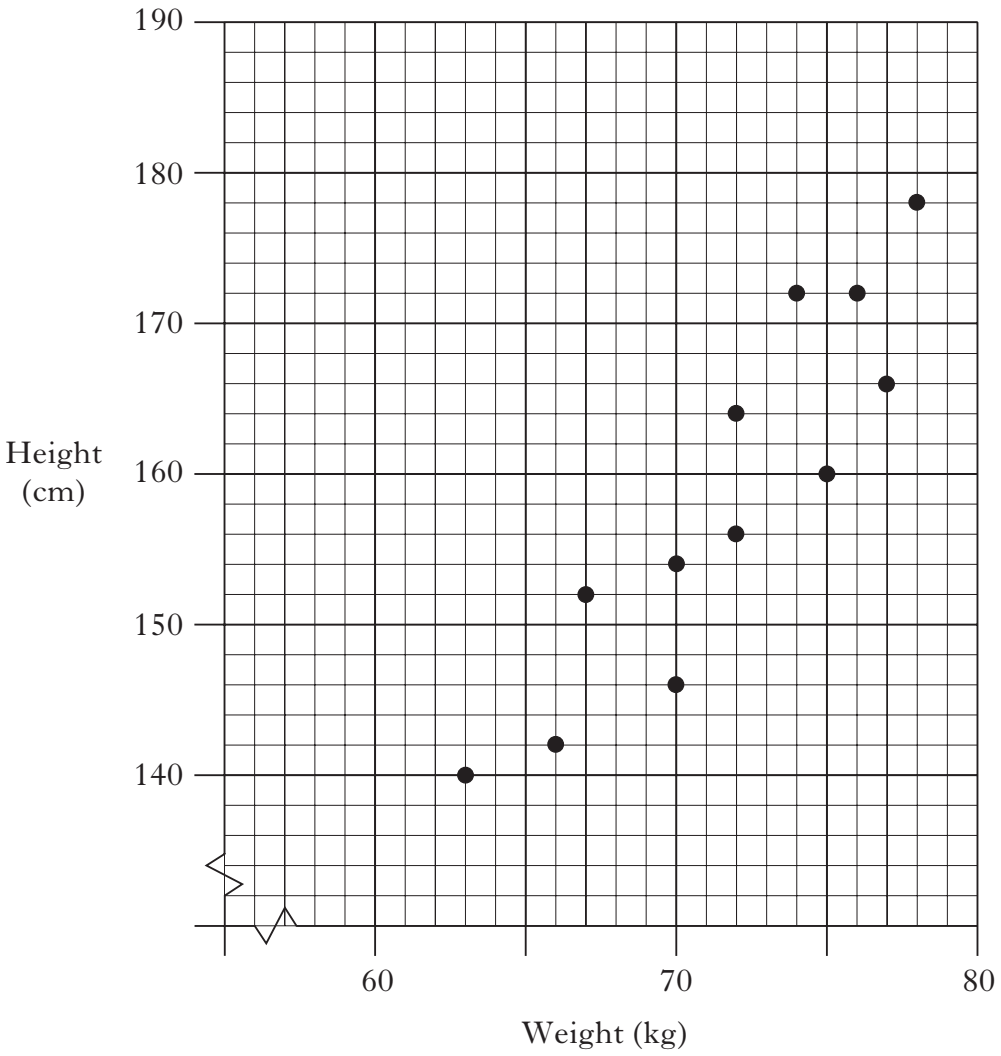
1

[Turn over

DO NOT WRITE IN THIS MARGIN

Marks

2. The scattergraph shows the weights and heights of a group of teenagers.



(*a*) Draw a line of best fit through the points on the graph. **1**

(*b*) Use your line of best fit to estimate the height of a teenager whose weight is 80 kilograms. **1**

DO NOT WRITE IN THIS MARGIN

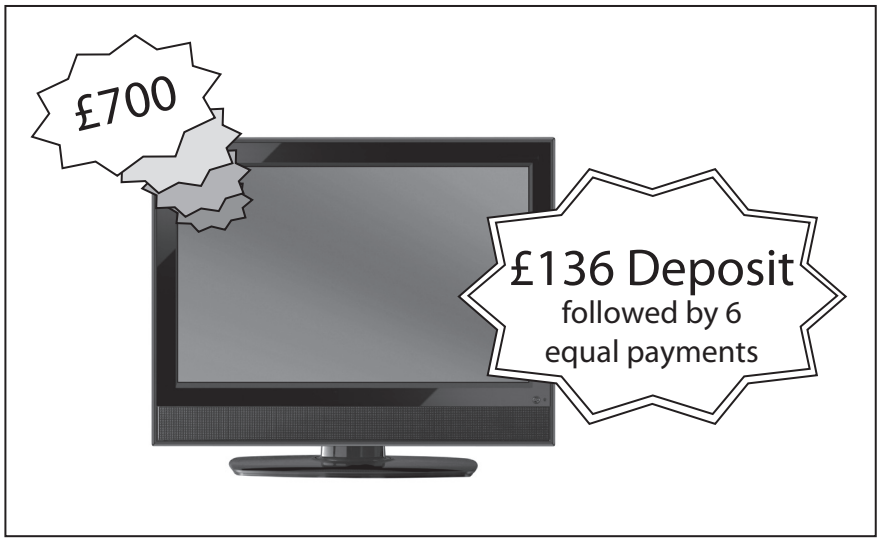
Marks

3. Solve algebraically the inequality

$$8x - 5 > 67.$$

2

4. The hire purchase price of this television is £700.



How much will each payment be?

3

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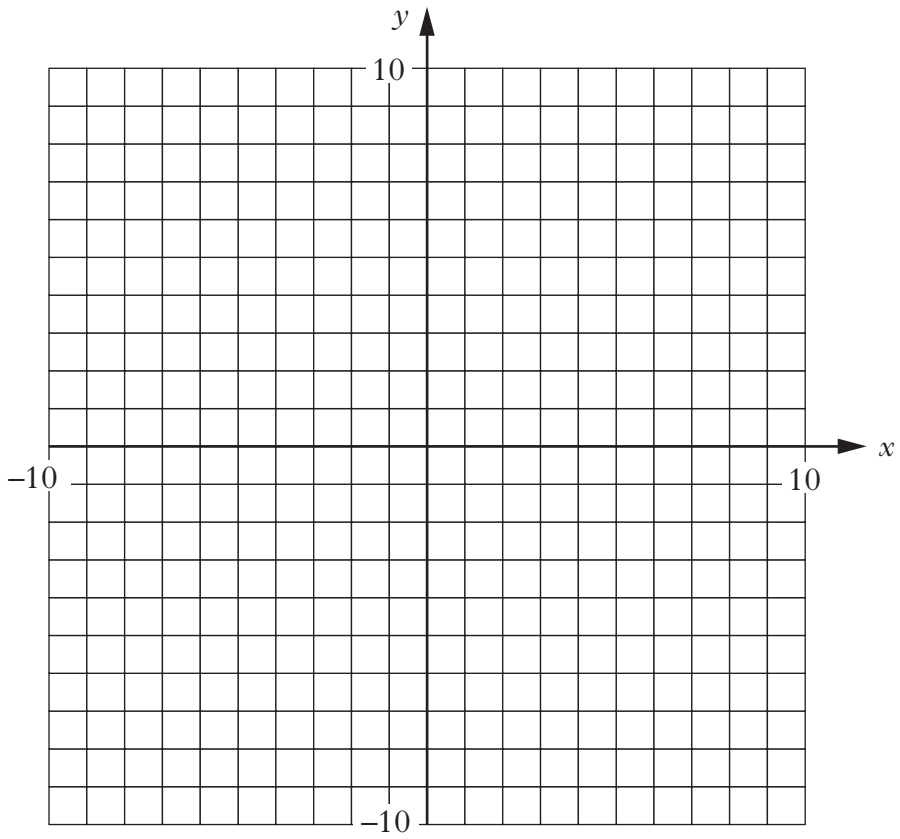
Marks

5. (*a*) Complete the table below for y = 2*x* – 3.

x	–2	0	4
y			

2

(*b*) Draw the line *y* = 2*x* – 3 on the grid.



2

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6. Fifty students completed a fitness test known as a "Beep Test".

The fitness levels they achieved are shown in the frequency table below.

Fitness Level	Number of Students	Fitness Level × Number of Students
5	4	20
6	5	30
7	9	63
8	21	
9	6	
10	5	
	Total = 50	Total =

(*a*) Complete the table above. **1**

(*b*) Find the mean fitness level achieved by these students. **2**

[Turn over

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7. A bag contains 8 blue marbles, 5 red marbles and 2 yellow marbles.

(*a*) A marble is taken from the bag.

What is the probability that the marble is yellow?

1

(*b*) This marble is put back in the bag.

One red marble and one blue marble are then removed.

What is the probability that the next marble taken from the bag is blue?

2

DO NOT WRITE IN THIS MARGIN

Marks

8. Two trains run from Glasgow to London.

They both have the same journey time.

	1st Train	2nd Train
Glasgow depart	1650	2215
London arrive	2125	

What time does the 2nd train arrive in London?

3

9. Evaluate $2gh - w$ when $g = -10$, $h = 4$ and $w = -30$.

3

[Turn over for Question 10 on *Page ten*

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10. (*a*) Before he went on holiday to Australia, Jack changed £2000 into Australian dollars.

The exchange rate was £1 = AU$1·58.

How many Australian dollars did Jack receive for £2000?

2

(*b*) While in Australia he changed a further £400 into Australian dollars.

He received AU$620.

What was the new exchange rate?

2

[*END OF QUESTION PAPER*]

ADDITIONAL SPACE FOR ANSWERS

DO NOT WRITE IN THIS MARGIN

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