Centre No.						Paper Reference								Surname	Initial(s)
Candidate No.						5	3	8	4	H	/	1	3	H	Signature

Paper Reference(s)

5384H/13H

Examiner's use only

Team Leader's use only

Edexcel GCSE

Mathematics

Unit 3 – Section A (Non-Calculator)

Higher Tier

Specimen Terminal Paper

Time: 1 hour 10 minutes

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page. Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 16 questions in this question paper. The total mark for this paper is 60.
There are 16 pages in this question paper. Any blank pages are indicated.
Calculators must not be used.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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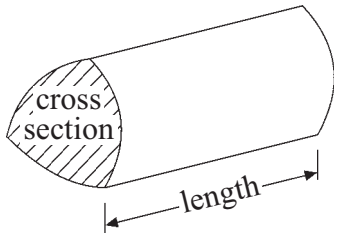
Formulae: Higher Tier

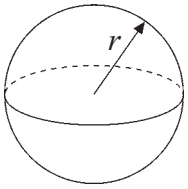
You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Volume of a prism = area of cross section × length



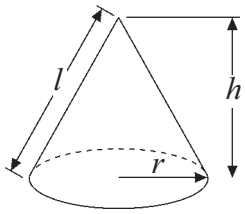
Volume of sphere $= \frac{4}{3}\pi r^3$

Surface area of sphere $= 4\pi r^2$

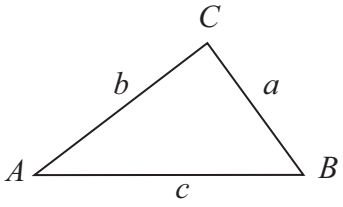


Volume of cone $= \frac{1}{3}\pi r^2 h$

Curved surface area of cone $= \pi r l$



In any triangle ABC



Sine Rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Cosine Rule $a^2 = b^2 + c^2 - 2bc\cos A$

Area of triangle $= \frac{1}{2}ab\sin C$

The Quadratic Equation

The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$, are given by

$$x = \frac{-b \pm \sqrt{(b^2 - 4ac)}}{2a}$$

Leave blank

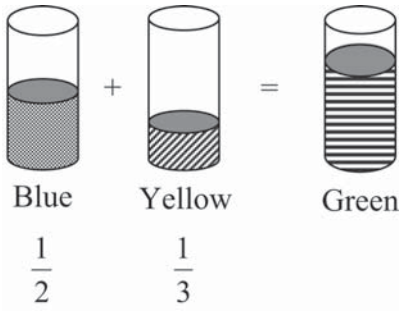
Answer ALL SIXTEEN questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. Malcolm has half of a tin of blue paint.

Stuart has a third of a tin of yellow paint.



Stuart pours all his paint into Malcolm's tin to make green paint.

What fraction of a tin of paint is now in Malcolm's tin?

.....

(Total 3 marks)

Q1

2. The total cost of a TV is £60 plus VAT at $17\frac{1}{2}\%$

Work out the total cost.

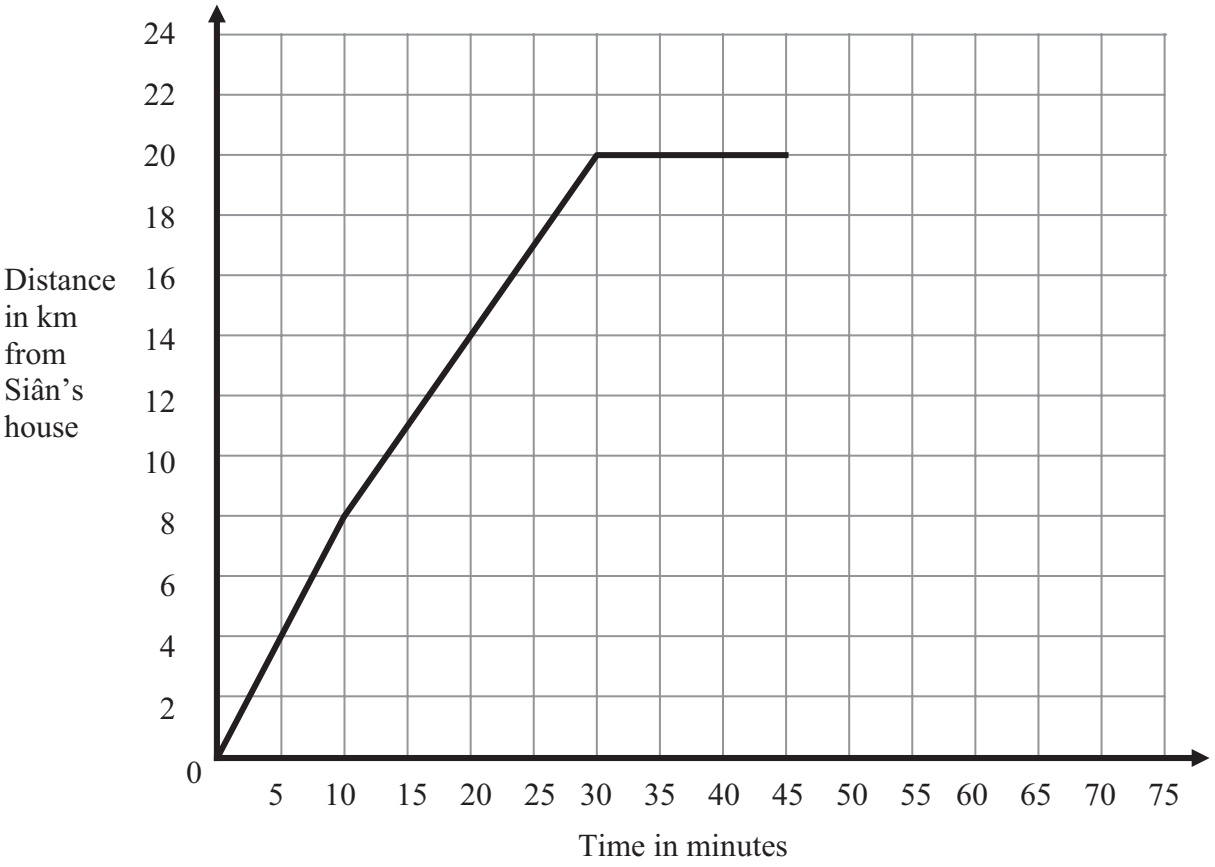
£ .....

(Total 3 marks)

Q2

Leave blank

3. Here is part of a travel graph of Siân's journey from her house to the shops and back.



(a) Work out Siân's speed for the first 10 minutes of her journey.
Give your answer in km/h.

..... km/h
(2)

Siân spent 15 minutes at the shops.
She then travelled back to her house at 60 km/h.

(b) Complete the travel graph.

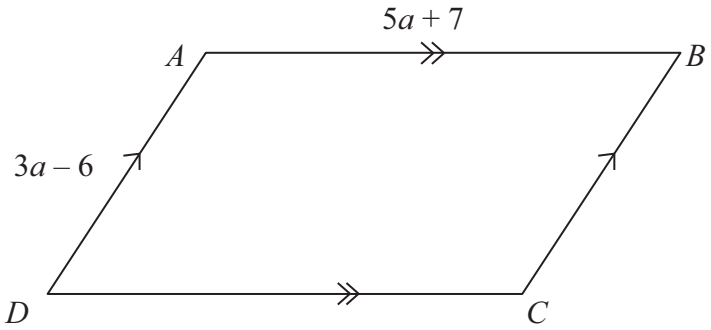
(2)

Q3

(Total 4 marks)

Leave blank

4. *ABCD* is a parallelogram.



The diagram shows the lengths in centimetres of two sides of the parallelogram.
The perimeter of the parallelogram is 58 cm.

Work out the length *AB*.

..... cm

(Total 4 marks)

Q4

5. A college wants to buy 570 calculators.
They are sold in boxes of 50.
Work out the number of boxes the college should buy.

.....

(Total 2 marks)

Q5

Leave blank

6. Rosa makes pizzas.

She uses cheese, topping and dough in the ratios 2 : 3 : 5
Rosa uses 70 grams of dough.

Work out the number of grams of cheese and the number of grams of topping Rosa uses.

Cheese ..... g

Topping ..... g

(Total 3 marks)

Q6

7. (a) Work out:

$$2\frac{11}{12} \div 1\frac{7}{8}$$

Write your answer as a mixed number in its simplest form.

.....

(3)

(b) Work out the value of $1\frac{2}{5} + 2\frac{3}{7}$

Give your answer as a fraction in its simplest form.

.....

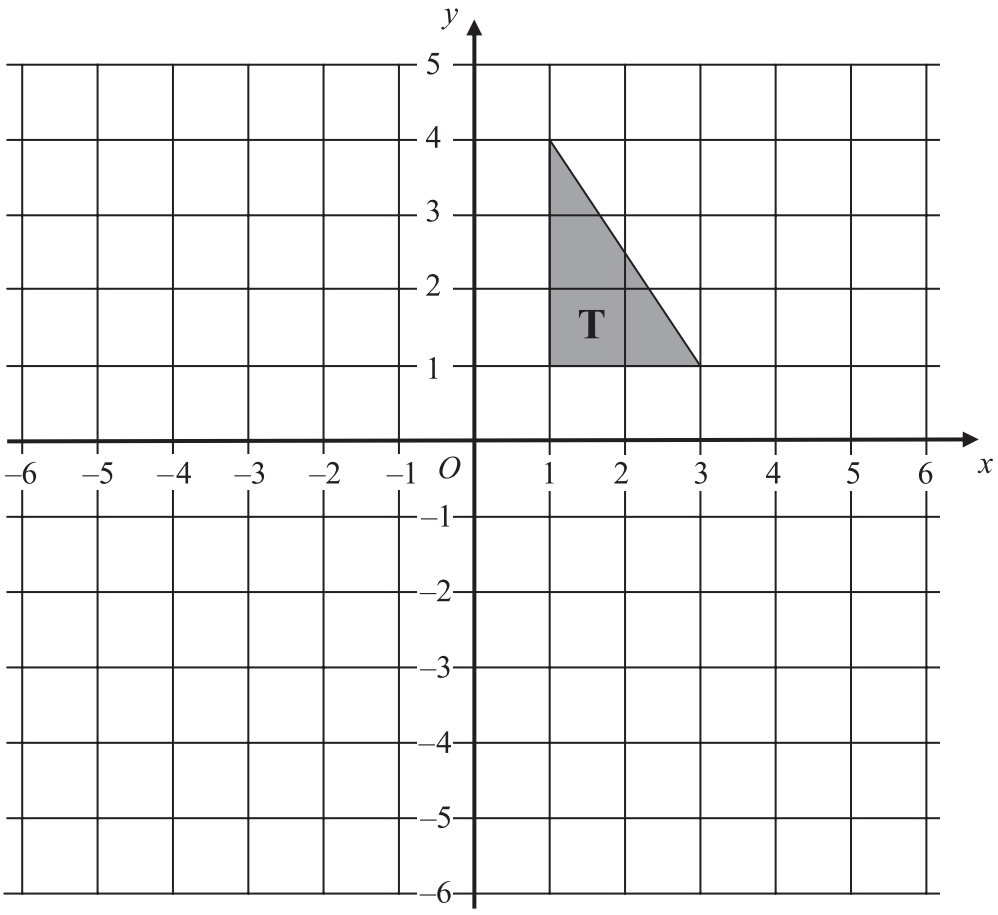
(3)

(Total 6 marks)

Q7

Leave blank

8.



(a) Reflect triangle **T** in the line $x = -1$.

(2)

(b) Rotate triangle **T** 90° clockwise using centre (0, 0).

(3) **Q8**

(Total 5 marks)

9. A straight line is given by the equation $y = \frac{1}{2}x + 7$

Write down the gradient of the line (m) and the y-coordinate of the point where it cuts the y-axis (c).

m = ...

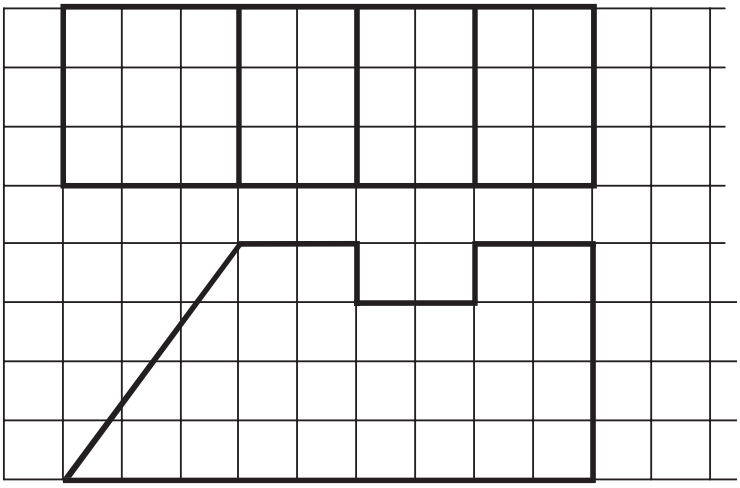
c = ... **Q9**

(Total 2 marks)

Leave blank

10. Here are the plan and front elevation of a prism.
The front elevation shows the cross section of the prism.

Plan



Front Elevation

In the space below, draw a 3-D sketch of the prism.

Q10

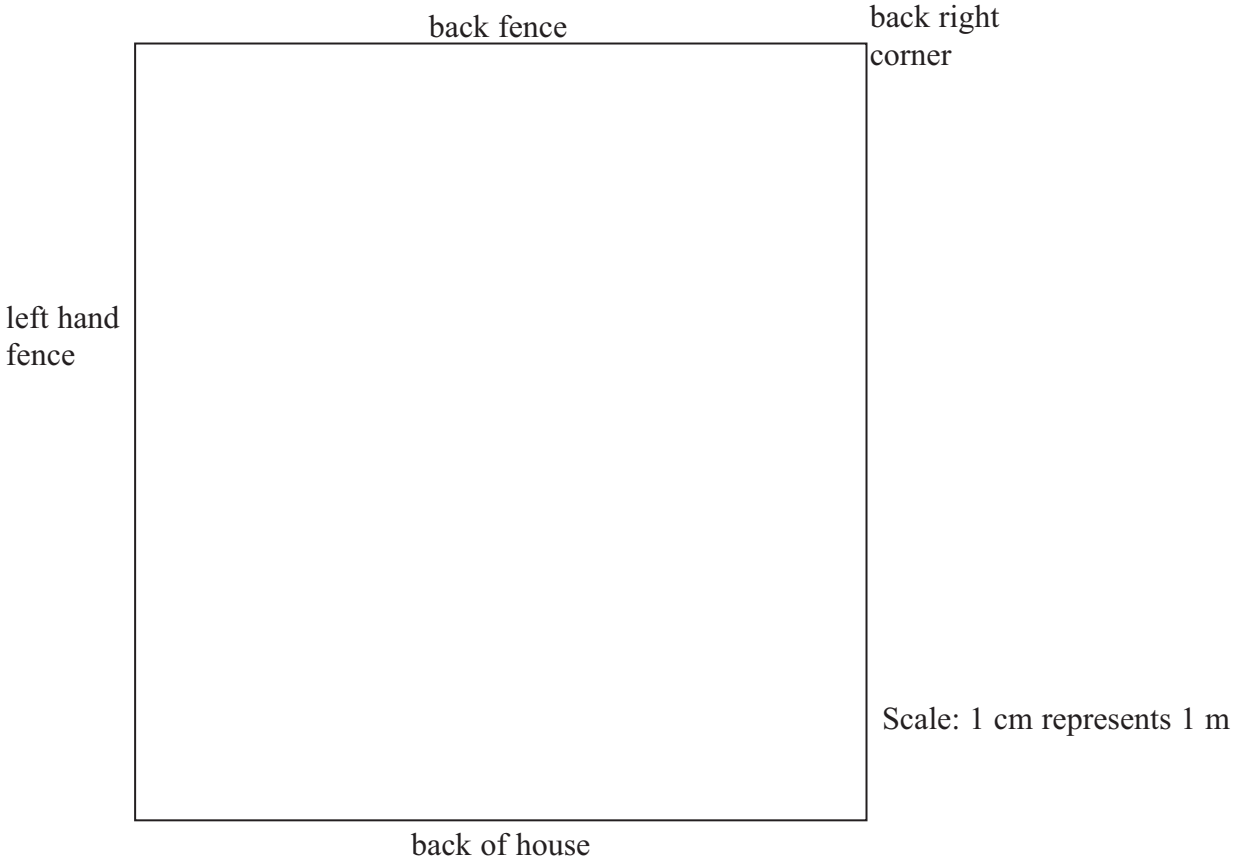
(Total 2 marks)

Leave blank

11. Derek wants to plant a tree in his rectangular garden.

The tree has to be:
more than 5 metres from the back of the house,
nearer to the left hand fence than the back fence,
less than 8 metres from the back right hand corner of the garden.

On the diagram, shade the region where the tree could be planted.
Use a scale of 1 cm to represent 1 m.



Q11

(Total 6 marks)

Leave blank

12. A haulage contractor has two types of lorry.

The type *A* lorries can carry 50 tonnes and make a profit of £400 each day.
The type *B* lorries can carry 60 tonnes and make a profit of £750 each day.

The contractor used *a* type *A* lorries and *b* type *B* lorries on one day.
On this day the lorries carried 730 tonnes and made a profit of £8000

Work out the number of type *A* lorries and type *B* lorries the contractor used that day.

..... type *A* lorries

..... type *B* lorries

Q12

(Total 5 marks)

Leave blank

13. The loudness (L) of a loudspeaker, in decibels, varies inversely as the square of the distance (d), in metres, from the loudspeaker.

When $L = 200$ decibels, $d = 5$ metres.

Calculate the distance you need to be from the loudspeaker when the loudness is 50 decibels.

..... m

(Total 4 marks)

Q13

Leave blank

14.

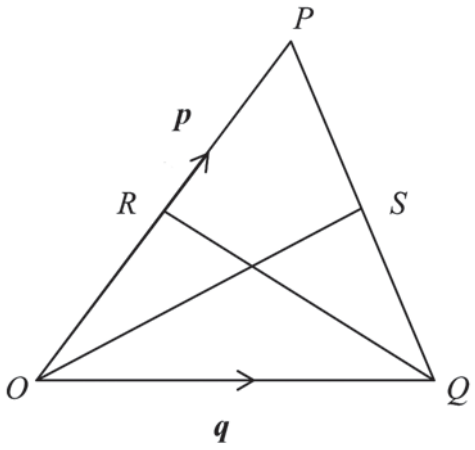


Diagram **NOT** accurately drawn

OPQ is a triangle
R is the midpoint of OP
S is the midpoint of PQ

$\overrightarrow{OP} = \boldsymbol{p}$ and $\overrightarrow{OQ} = \boldsymbol{q}$

(i) Express $\overrightarrow{OS}$ in terms of $\boldsymbol{p}$ and $\boldsymbol{q}$.

$\overrightarrow{OS}$ = ...

(ii) Prove that RS is parallel to OQ.

Q14

(Total 5 marks)

Leave blank

15. Solve $\frac{2}{x+1} + \frac{3}{x-1} = \frac{5}{x^2-1}$

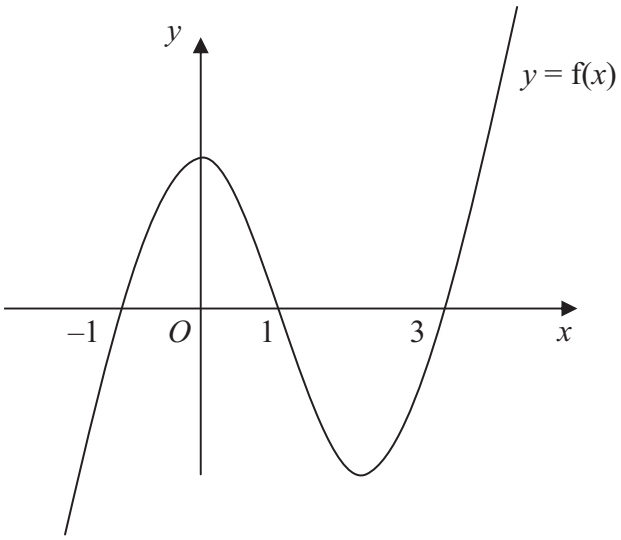
$x =$ .....

Q15

(Total 4 marks)

Leave blank

16. $y = f(x)$ is a function of x.



The graph of $y = f(x)$ cuts the x axis when $x = –1$, 1 and 3

Write down the coordinates of the points where these graphs cut the x axis.

(i) $y = f(– x)$

.....

(ii) $y = –f(x + 5)$

.....

Q16

(Total 2 marks)

TOTAL FOR SECTION B: 60 MARKS

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