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

Paper Reference(s)

5544/14

Edexcel GCSE

2544 Mathematics B

Unit 4 (Terminal)

Paper 14 – Section A (Non-Calculator)

Higher Tier

Practice Paper C

Time: 1 hour 10 minutes

Examiner's use only

Team Leader's use only

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

Formulae sheet.

Instructions to Candidates

In the boxes above, write your Centre Number and Candidate Number, your surname, initial(s) and signature.
Check that you have the correct question paper.
Answer **ALL** the questions in the spaces provided in this question paper.
Supplementary answer sheets may be used.

Information for Candidates

The total mark for this paper is 60.
The marks for the various parts of questions are shown in round brackets, e.g.: **(2)**.
This paper has 15 questions.
Calculators may NOT be used.

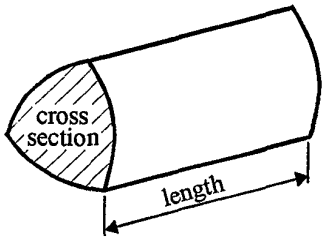
Advice to Candidates

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

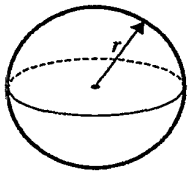
Leave blank

Formulae – Higher Tier
You must not write on this formula page.
Anything you write on this formulae page will gain NO credit.

Volume of prism = area of cross-section × length

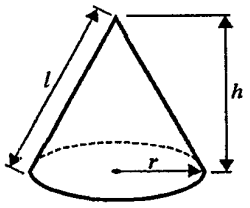


Volume of sphere = $\frac{4}{3}\pi r^3$



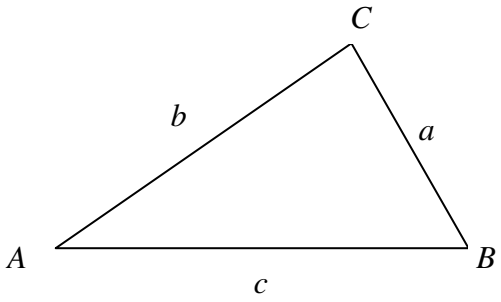
Surface area of sphere = $4\pi r^2$

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



Curved surface area of cone = πrl

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 a 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 FIFTEEN questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator

1. $S = 2p + 3q$

$p = -4$
$q = 5$

(a) Work out the value of S.

$S =$.....

(2)

$T = 2m + 30$

$T = 40$

(b) Work out the value of m.

$m =$.....

(2)
(Total 4 marks)

Leave blank

2. Lillian, Max and Nazia share a sum of money in the ratio 2 : 3 : 5

(a) What fraction of the money does Max receive?

……..
(2)

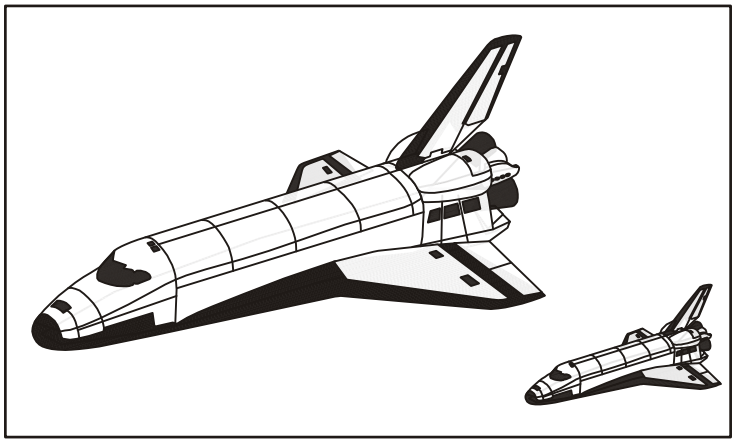
Nazia receives £60

(b) Work out how much money Lillian receives.

£……
(3)
(Total 5 marks)

Leave blank

3. Picture **NOT** accurately drawn



A model of a space shuttle is made to a scale of 2 centimetres to 1 metre.

The length of the space shuttle is 24 metres.

(a) Work out the length of the model.

Give your answer in centimetres.

……cm
(2)

The height of the model is 10 centimetres.

(b) Work out the height of the space shuttle.

Give your answer in metres.

……m
(2)
(Total 4 marks)

Leave blank

4. (a) $-3 \leq n < 2$
n is an integer.
Write down all the possible values of n.

……..
(2)

(b) Solve the inequality

$$5x < 2x - 6$$

……
(2)
(Total 4 marks)

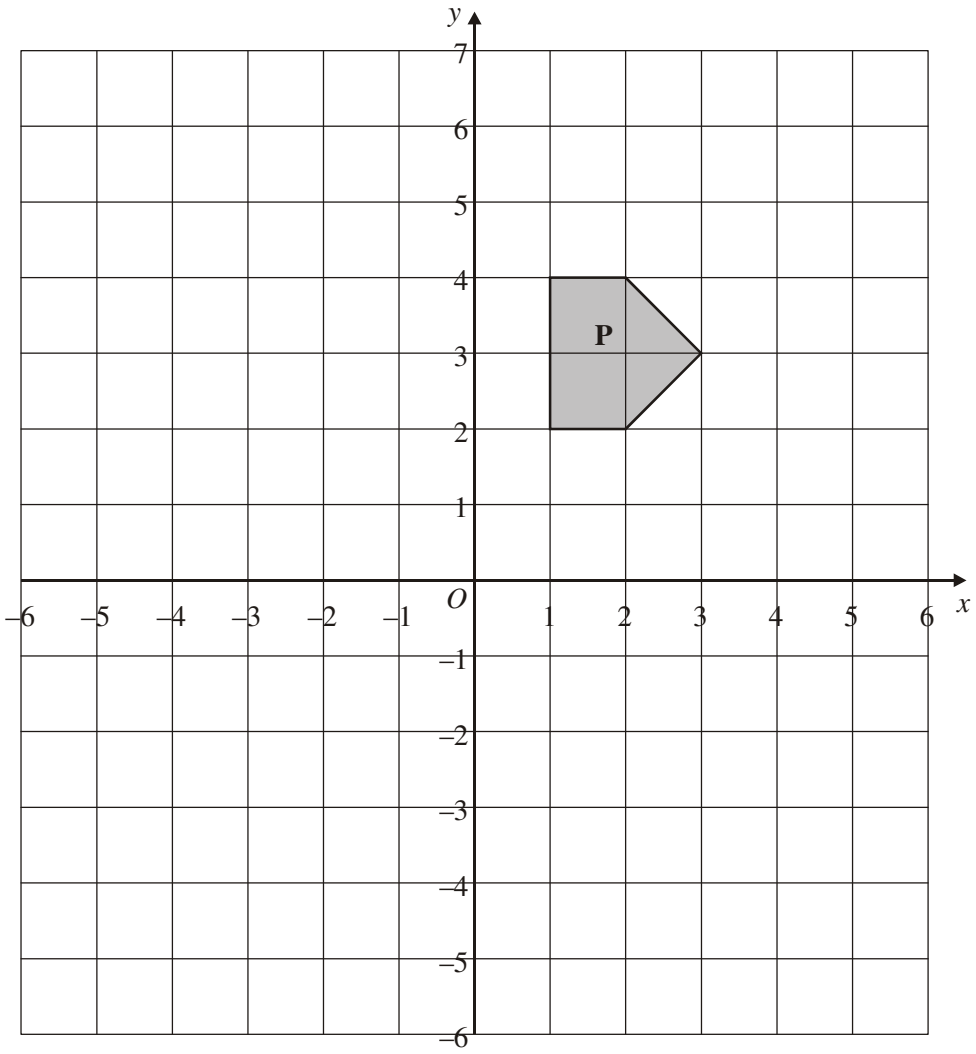
---

5. Work out $\frac{2}{3} + \frac{1}{5}$

……
(Total 2 marks)

Leave blank

6.



On the grid, rotate the shaded shape **P** one quarter turn anticlockwise about *O*.

Label the new shape **Q.**

(Total 3 marks)

Leave blank

7. (a) Solve $4x + 3 = 19$

$x =$ .....

(2)

(b) Solve $4y + 1 = 2y + 8$

$y =$.....

(2)
(Total 4 marks)

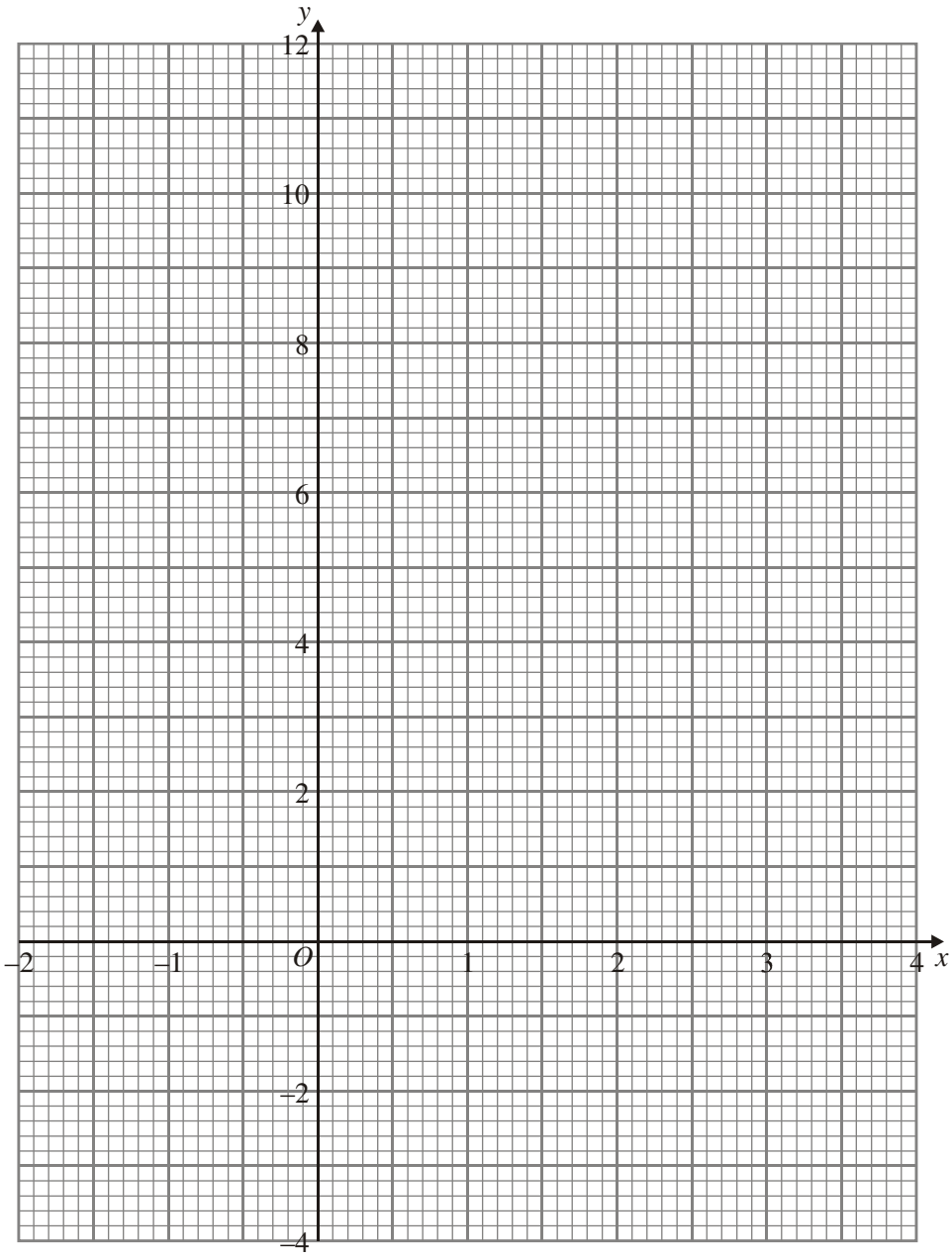
Leave blank

8. (a) Complete the table of values for $y = x^2 - 3x + 1$

x	–2	–1	0	1	2	3	4
y	11		1	–1			5

(2)

(b) On the grid, draw the graph of $y = x^2 - 3x + 1$

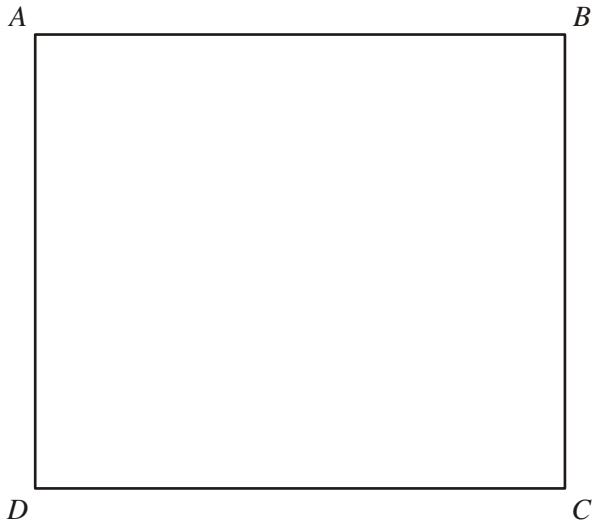


(2)

(Total 4 marks)

Leave blank

9.



ABCD is a rectangle.
Shade the set of points inside the rectangle which are **both**

more than 4 centimetres from the point *A*
and more than 1 centimetre from the line *DC*.

(Total 4 marks)

---

10. Hajra's weekly pay this year is £240
This is 20% more than her weekly pay last year.

Bill says 'This means Hajra's weekly pay last year was £192'.

Bill is wrong,

(a) Explain why.

.....

.....

(1)

(b) Work out Hajra's weekly pay last year.

£.....

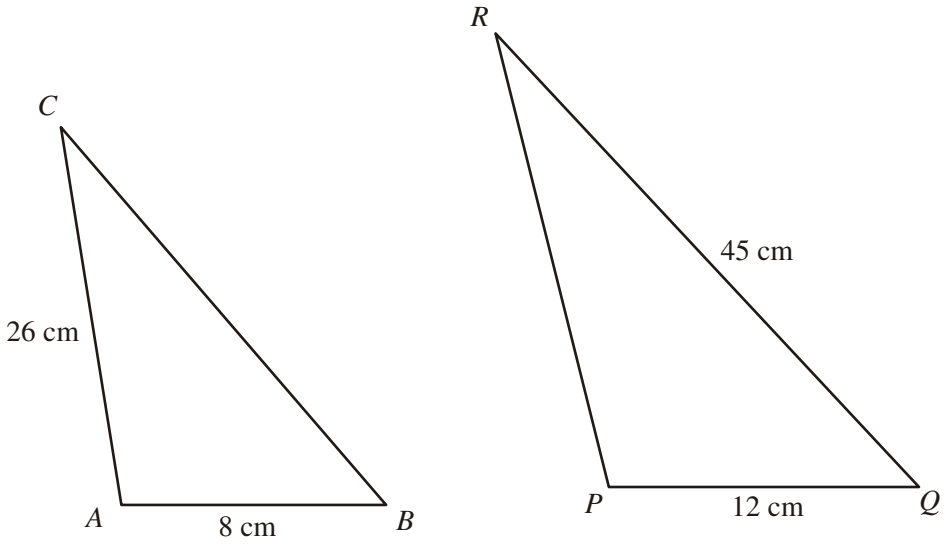
(2)

(Total 3 marks)

Leave blank

11.

Diagrams **NOT** accurately drawn



The two triangles *ABC* and *PQR* are mathematically similar.

Angle *A* = angle *P*.
Angle *B* = angle *Q*.
AB = 8 cm.
AC = 26 cm.
PQ = 12 cm.
QR = 45 cm.

(a) Work out the length of *PR*.

.....cm
(2)

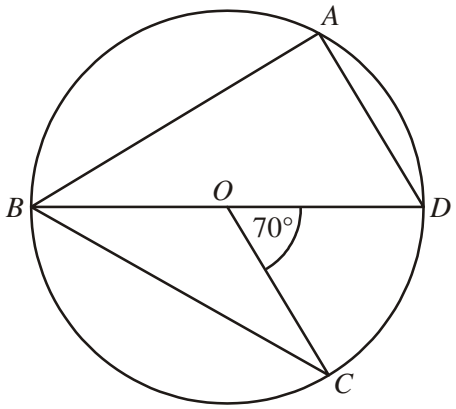
(b) Work out the length of *BC*.

.....cm
(2)
(Total 4 marks)

Leave blank

12.

Diagram **NOT** accurately drawn



A, B, C and *D* are points on the circumference of a circle, centre *O*.
BOD is a straight line.
Angle *COD* = 70°

(a) Find the size of angle *BAD*.

Give a reason for your answer.

.....°
(2)

(b) Find the size of angle *CBD*.

Give a reason for your answer.

.....°
(2)
(Total 4 marks)

Leave blank

13. By eliminating y, find the solutions to the simultaneous equations.

$$x^2 + y^2 = 25$$

$$y = x - 7$$

x = ... y = ...

or x = ... y = ...

(Total 6 marks)

Leave blank

14. (a) Write down the value of $8^{\frac{1}{3}}$

.....
(1)

$8\sqrt{8}$ can be written in the form 8^k

(b) Find the value of k.

k = ...
(1)

$8\sqrt{8}$ can also be expressed in the form $m\sqrt{2}$ where m is a positive integer.

(c) Express $8\sqrt{8}$ in the form $m\sqrt{2}$

.....
(2)

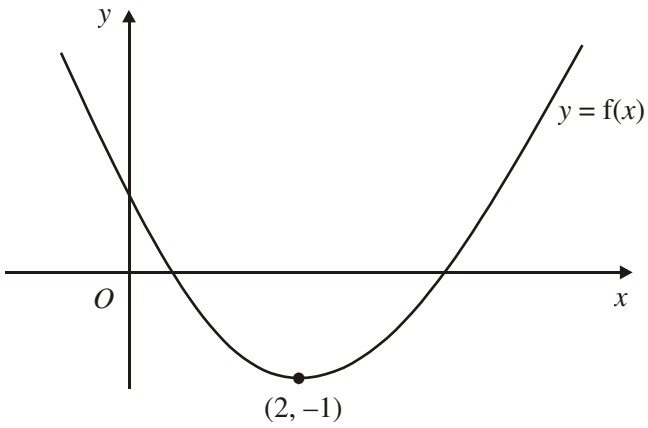
(d) Rationalise the denominator of $\frac{1}{8\sqrt{8}}$

Give your answer in the form $\frac{\sqrt{2}}{p}$ where p is a positive integer.

.....
(2)
(Total 6 marks)

Leave blank

15.



The diagram shows part of the curve with equation $y = f(x)$
The minimum point of the curve is at $(2, -1)$

Write down the coordinates of the minimum point of the curve with equation

(i) $y = f(x + 2)$

.....

(ii) $y = 3f(x)$

.....

(iii) $y = f(2x)$

.....

(Total 3 marks)

TOTAL FOR PAPER: 60 MARKS

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2544 Unit 4 Higher tier Practice Paper C (Section A – Non-Calculator) Answers

1 (a) 7

(b) 5

2 (a) $\frac{3}{10}$

(b) £24

3 (a) 48 cm

(b) 5 m

4 (a) –3, –2, -1, 0, 1

(b) $x < -2$

5 $\frac{13}{15}$

6 Correct rotation

7 (a) 4

(b) 3.5 or equivalent

8 (a) 5, –1, 1

(b) Correct graph

9 Correct diagram

10 (a) £192 increased by 20% gives £230.40 not £240

(b) £200

11 (a) 39 cm

(b) 30 cm

12 (a) 90°, Angle in a semi-circle is a right-angle

(b) 35°, Angle at the centre is twice the angle at the circumference

13 $x = 3, y = -4$ $x = 4, y = -3$

14 (a) 2

(b) 1.5 or equivalent

(c) $16\sqrt{2}$

(d) $\frac{\sqrt{2}}{32}$

15 (i) (0, –1)

(ii) (2, –3)

(iii) (1, –1)