Write your name here

Surname		Other names

Rodillian Academy
Level 1 / Level 2
GCSE (9–1)

Centre Number

Candidate Number

Y9 Mathematics

Practice Examination 1

To be completed for the end of the holidays

Paper Reference

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.
Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need*.
- You must **show all your working**.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may not be used.**

Information

- The total mark for this paper is 75
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Q1   a 2.1349×82.7

....

(2)

b $8146 \div 3$

....

(1)

c $16324 - 7242$

....

(1)

d $0.00354 + 82 + 614.523 + 12.9$

....

(1)

Q2   What is the $LCM(84,154) - HCF(84,154)$

....

(5)

Q3   Estimate $\dfrac{62.315 \times 68.4721}{94.231}$

....

(2)

Q4 a Solve $9x + 3x - x = 365$

....

(1)

b Expand and simplify $7(4x - 24) + 13(7x + 14)$

....

(2)

c Expand and simplify $(5x + 2)(4x - 7)$

....

(2)

Q5 a   Write the following as a single term: $2q^2 \times q^3 \times 5s^3 \times 9s^4$

....

(2)

b   Calculate $\left(\frac{7}{8}\right)^2$

....

(1)

c   Simplify $(t^6)^{-3}$

....

(1)

d   Write the following as a single term.

$$\frac{t^5 \times t^4 \times t^7}{t^9 \div t^4}$$

....

(2)

Q6   Two regular polygons have a different number of sides.

Name the polygons.
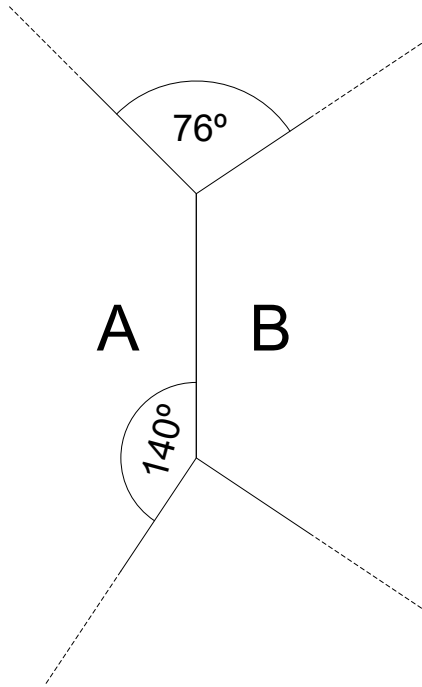
Shape A ………………………………………………………

Shape B ……………………………………………………..

(4)

Q7 Mr Jones was a maths teacher.

He collected the scores for the year group in a maths test.

Score (s)	Frequency		
$0 < s \leq 12$	31		
$12 < s \leq 14$	46		
$14 < s \leq 18$	53		
$18 < s \leq 25$	28		

Find the estimated mean score that the children in the year group.

....

(4)

Q8   Below is a list of descriptive statistics for some data.

Statistic Descriptor	Value
Maximum	47
Minimum	9
Mean	31.7
Median	29
Mode	27
Upper Quartile	34
Lower Quartile	15

From the descriptors above, draw a box plot on the grid below.

6   8   10   12   14   16   18   20   22   24   26   28   30   32   34   36   38   40   42   44   46
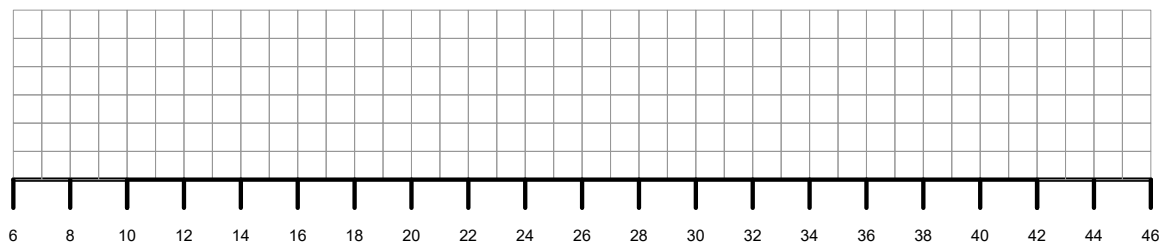
(4)

Q9   An aircraft flew at a bearing of 80° for five miles. It banked right and flew on a new heading of 130° for twelve miles. At what bearing would the aircraft have to fly to return to its starting point?

....

(2)

Q9 The time for a journey is directly proportional to the number of revs that a car runs at.

When revs are 2100, t is 150.

What is t when revs are 450?

………………………………..
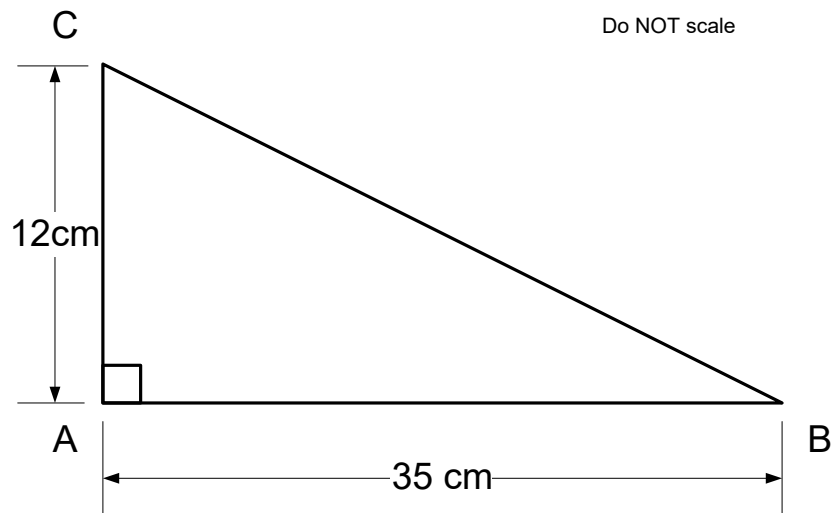
(3)

Q10 What is 71% of 428?

………………………………..

(2)

Q11 A car travelled at 70 mph for 240 miles. How long did the journey take?

…………………………………..

(2)

Q12 ABC is a triangle.

Do NOT scale

C

12cm

A

35 cm

B

Find the length of BC.

…………………………………..

(2)

Q13   Look at the grid below.
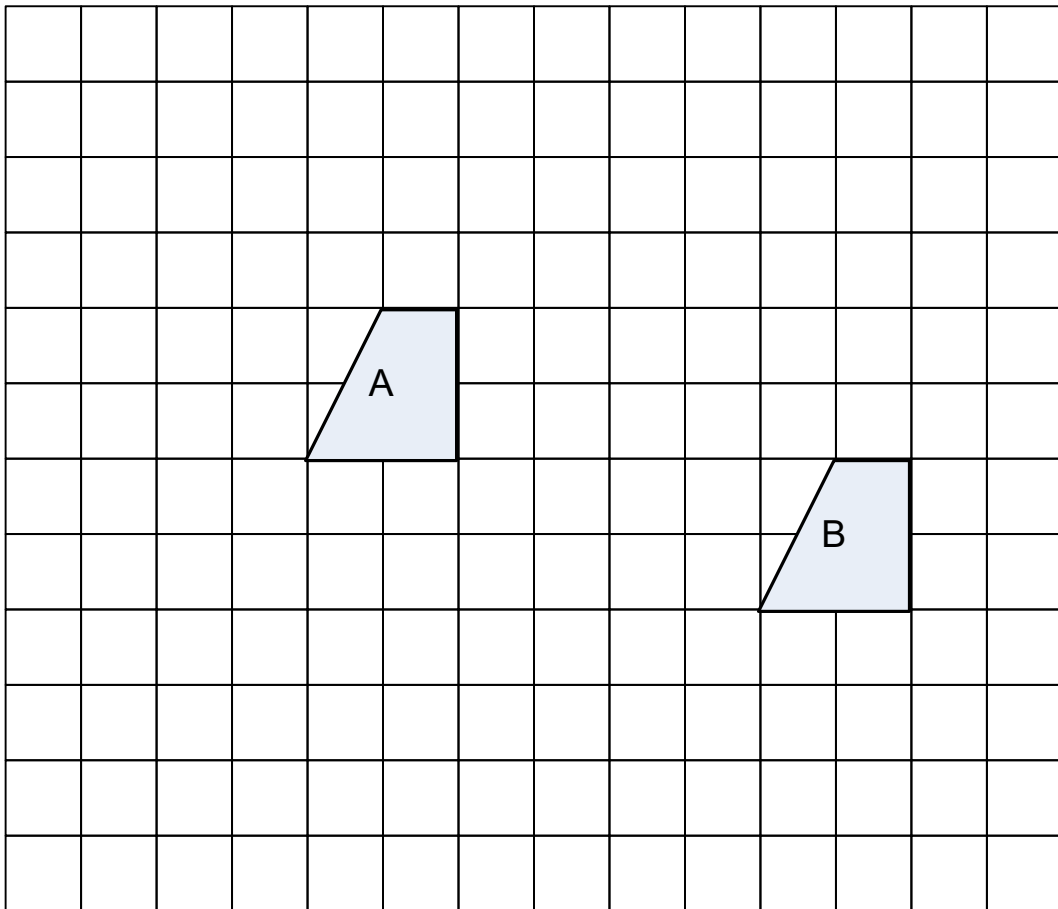
Describe fully the single transformation to map A to B.

_____

_____

(2)

Q14   a   Factorise $16x + 26y$

....

(2)

b   Factorise $9x^3 + 63x$

....

(2)

Q15   Fill in the table for $y = 2x - 12$ for values of $-4 \le x \le 4$

x	-4	-3	-2	-1	0	1	2	3	4
y									

(2)

Q16   Solve these simultaneous equations

$$3x + y = 46$$

$$5x - 3y = 102$$

$x=$ ....

$y=$ ....

(3)

Q17   Look at the diagram below.

35 mm

45º
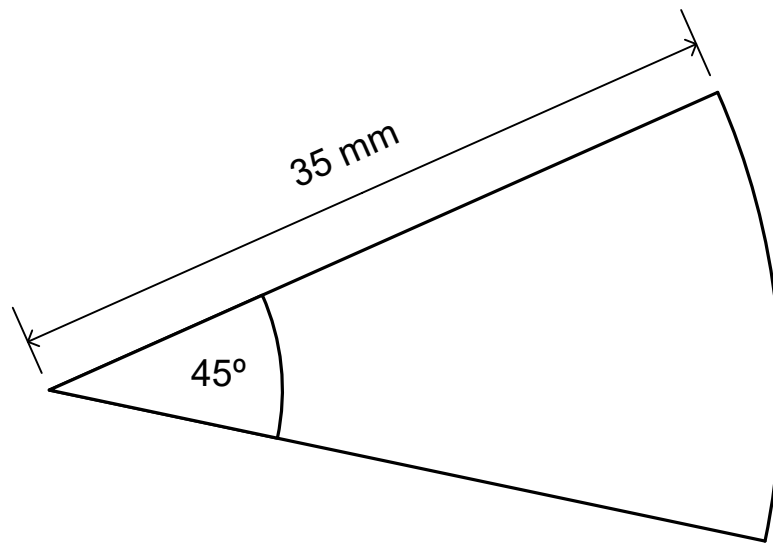
a   What is the exact area of the sector?

.... mm²

(2)

b   What is the exact perimeter of the sector?

.... mm

(2)

Q18   In an online game, the chance of winning was 0.3.

James and Joanne took their test.

a   Complete the probability tree below.

Joanne

James

0.3 — Win

0.3 — Win

Lose

....

0.3 — Win

Lose

....

Lose

....
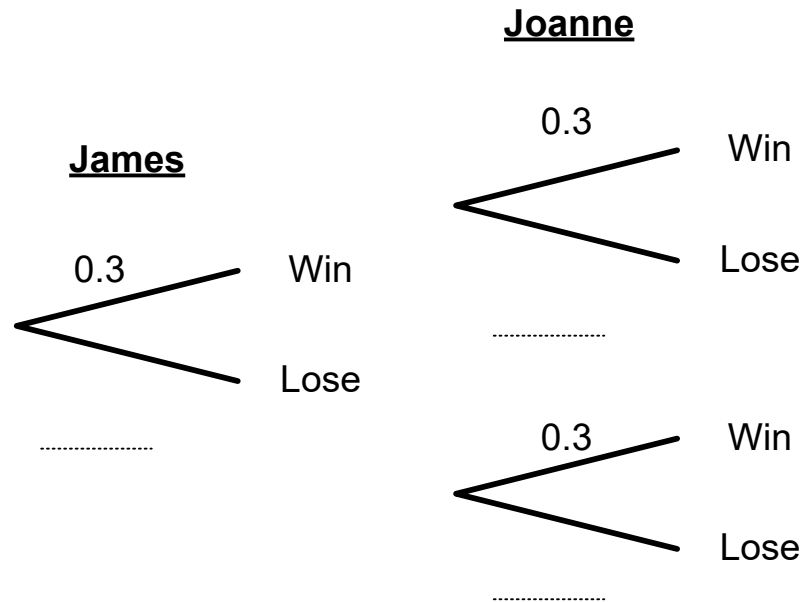
(1)

b   What is the chance of both James and Joanne both winning their respective games?

....

(2)

c   What is the chance of James winning and Joanne losing?

....

(2)

Q19 At options time, a school allowed students to take one modern language.

In Year 9, there were 234 people.

The total number of people opting for French was 77, of which 35 were male.

Sixty-one females took Spanish.

Altogether, there were 119 boys, of which 32 selected German.

Use this information to fill in the table below.

	French	Spanish	German	Total
Male				
Female				
Total				

(4)

Q20 The following is part of a quadratic sequence.

-5   8   27   52   83

Find the nth term.

(5)