BENENDEN

Lower School Entrance Exam 2015

MATHEMATICS

11+

1 Hour

Name:	……..……
School:	……..……
Date:	……

Instructions to Candidates:

- Calculators may **not** be used
- Attempt all questions
- Show ALL working
- Check your answers for accuracy
- Total marks for this paper = 80

1. (a) Write a number in each box so that each calculation is correct.

(i) $\square + 249 = 361$

(ii) $\square \times 11 = 176$

(iii) $\square \div 9 = 153$

(iv) $\square + 5^2 = 31$

(4)

(b) Here are four cards. Each card has a number on it.



These four cards are arranged to make the number 5732

(i) Ben chooses three of the cards to make the **smallest** possible number.

Which three cards did Ben choose?

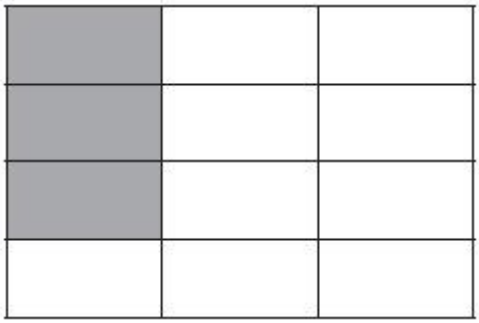


(ii) Arrange **the three cards Ben chose in (i)** to make the **largest** possible **odd** number.



(4)

2. (a)



(i) What fraction of this shape is shaded?
Give your fraction in its simplest form.

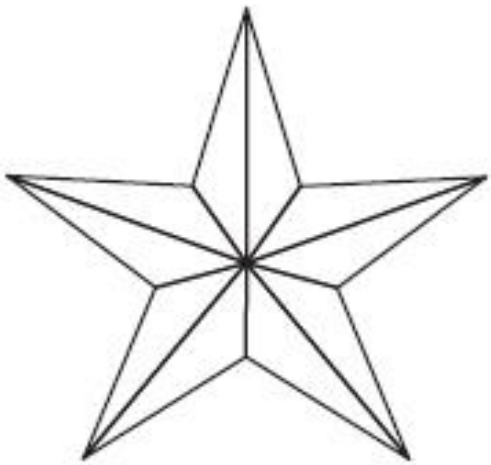
.....

(ii) Write your answer to part (i) as a decimal.

.....

(3)

(b)



(i) Shade 20% of this shape.

(ii) What percentage of the shape is unshaded?

.....% (2)

3.

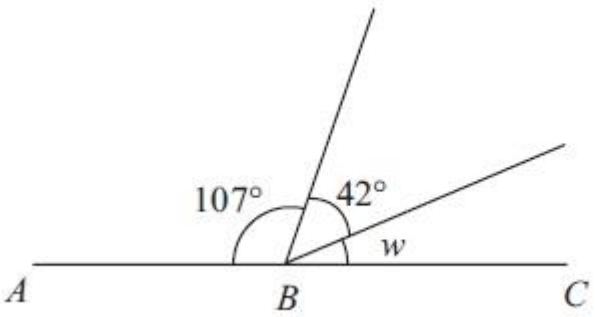


Diagram **NOT** accurately drawn

ABC is a straight line.

a) (i) Work out the size of angle *w*.

.....°

(ii) Give a reason for your answer.

.....

(3)

(b)

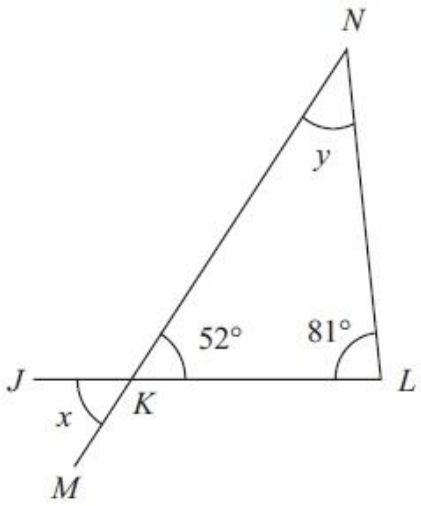


Diagram **NOT** accurately drawn

JKL and *MKN* are straight lines.

(i) Find the size of angle x.

.....°

(ii) Find the size of angle y.

.....° (3)

4. Calculate the following. Show your working clearly

a) 34907 + 3057

b) 21072 – 356

…….. ……

c) 47 x 36

d) 182266 ÷ 7

.... (8)

5. Change the following to the units indicated

a) 16 m = ……..... cm

b) 5km = ……..... m

c) 2km = ... cm

d) 145mm = ……..cm

e) 45000g = ...kg

(5)

6. Here are the first five terms of a number sequence.

2 6 18 54 162

(a) Work out the next term of the sequence.

.....(2)

(b) Explain how you worked out your answer.

.....

.....(1)

7. (a) Write down the value of the 3 in the number 7.432

.....(1)

(b) Round 7.482 to the nearest whole number.

.....(1)

(c) Write down the number which is exactly halfway between 0.7 and 0.8

.....(1)

(d) Write these numbers in order of size.
Start with the smallest number.

0.14 0.35 0.4 0.07 0.306

.....(2)

(e) Write 0.31 as a fraction.

.....
(1)

8.

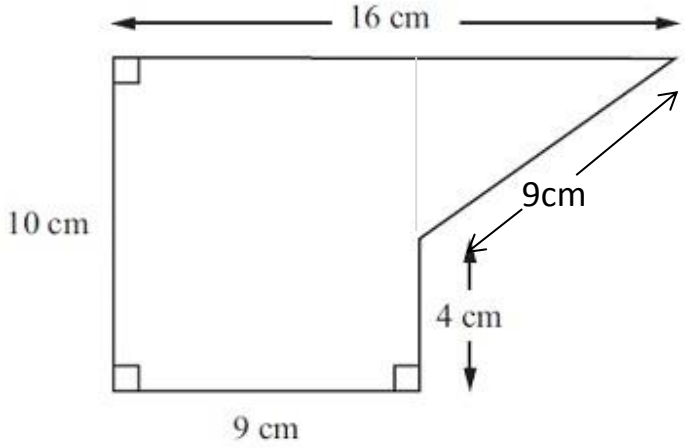


Diagram **NOT** accurately drawn

The diagram shows a shape. It is made from a triangle on the side of a rectangle. Showing your working:

a) Work out the perimeter of the whole shape. (Include the correct units)

..... (2)

b) Work out the area of the shape. (Include the correct units)

.....(2)

9.

24	25	26	27	28	29	30

From the numbers in the box, write down

(i) a multiple of 9 .....

(ii) a factor of 90 .....

(iii) a square number .....

(iv) a prime number .....

(v) a number that is a multiple of both 4 and 7 ..... (5)

10. The table shows midday temperatures in four cities on one day in winter.

City	Midday temperature (°C)
Paris	2
Cardiff	–5
London	–3
Edinburgh	–1

(a) Which city had the lowest midday temperature?

.....

(1)

By midnight, the temperature in London had fallen by 5°C.

(b) Work out the midnight temperature in London.

.....°C

(2)

(c) What was the difference between the midday temperatures of Paris and Edinburgh?

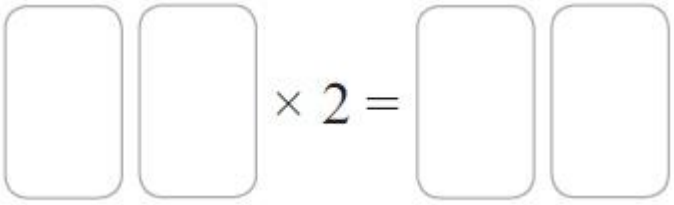
.....°C

(2)

11. (a) Here is a list of four numbers.

1 3 4 7

Choosing numbers from the list, write a different number in each box to make the calculation correct.



(2)

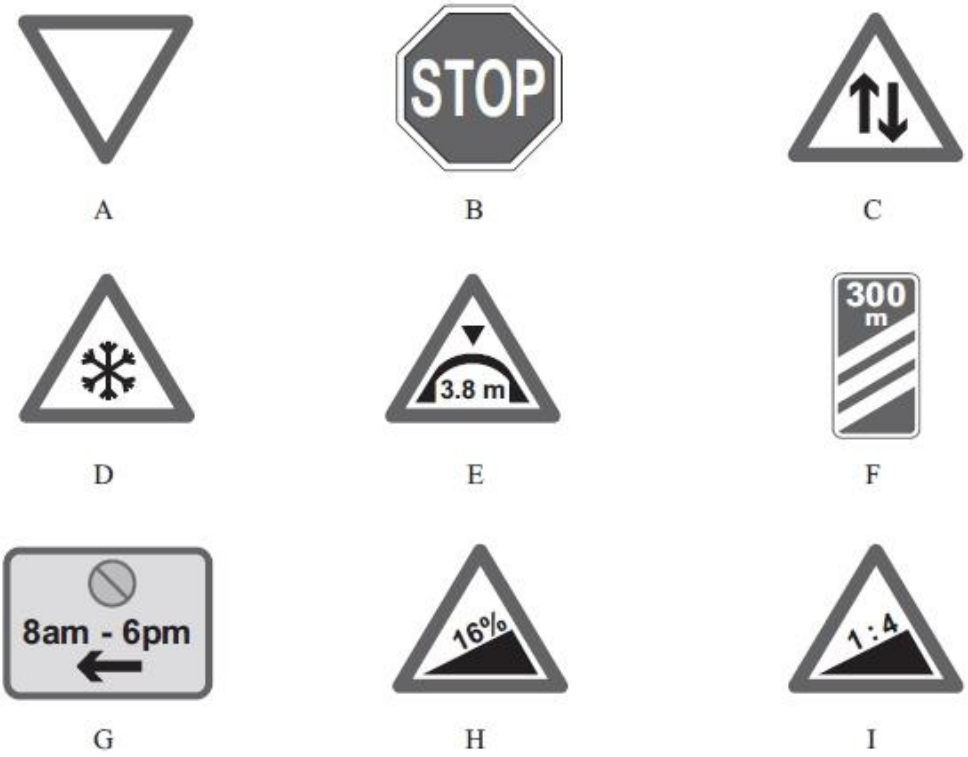
(b) Explain why the calculation can never be correct if the list is

1 3 5 7

.....

..... (1)

12. Here are nine road signs.



a) Shape A has 3 equal sides. What is the name for this type of triangle

..... (1)

b) Shape B has 8 sides. What is the mathematical name for this shape?

.....(1)

c) Write down all the signs that have exactly 3 lines of symmetry.

.....(2)

13. There are 20 sweets in a bag. 12 of the sweets are toffees. Work out the percentage of the sweets that are **not** toffees. Show your working



.....(3)

14. Vicky counts the number of birds in her garden at 8 am on each of 10 days.

5 3 3 2 0 2 4 2 4 15

(a) Write down the mode.

..... (2)

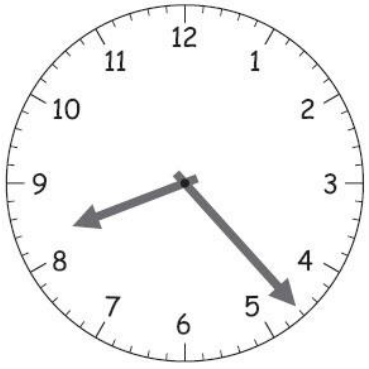
(b) Work out the range

..... (1)

(c) Work out the mean.

.....(2)

15.



(a) Write down the time shown on the clock.

.....

(1)

Lisa got on a bus at 08 45 and Lisa got off the bus at 10 20

(b) How long was Lisa on the bus?

..... (2)

16 a) Alice is travelling from home to school on her bicycle, a distance of 3km. She cycles at 9km/hr. How long will it take her to get to school?

..... (2)

b) On her way home from school she is slower and travels at 8km/hr. After 15 minutes she stops at a sweet shop. How far from home is the sweet shop?

..... (2)

17. Here is a right-angled triangle.

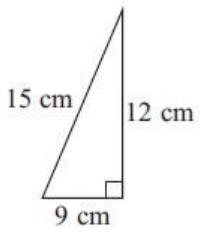


Diagram **NOT** accurately drawn

The shape below is made from 4 of these triangles.

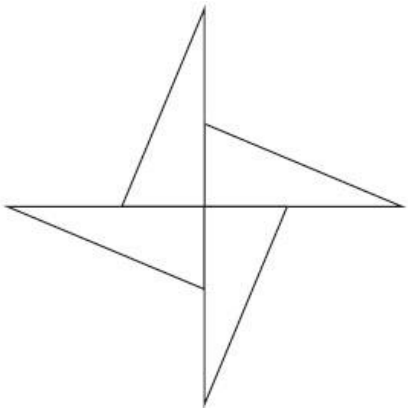


Diagram **NOT** accurately drawn

Work out the perimeter of the shape.

.....(3)

END OF EXAM – 80 marks – now check your work