BENENDEN

Lower School Entrance Paper 2016

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 = 100

1. Write a number on each line so that each calculation is correct.

(i) _____ + 75 = 250

(ii) _____ - 30 = 79

(iii) _____ x 11 = 143

(iv) _____ ÷ 4 = 36

(8)

2. In each line below, put two different numbers on the empty lines to complete the sum, using two of the four numbers in the brackets. An example has been done to help you:

Eg. ____ + ____ = 2 x 11 (5, 6, 10, 12)

The answer is 10 and 12.

(a) ____ - ____ = 9 x 6 (4, 6, 56, 60)

(b) ____ x ____ = 65 - 32 (2, 3, 9, 11)

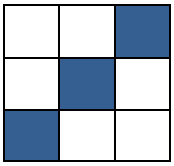
(c) ____ ÷ ____ = 3 x 7 (2, 3, 10, 42)

(d) ____ + ____ = 6 x 8 (15, 16, 20, 28)

(e) ____ ÷ ____ = 5 + 18 (2, 3, 32, 69)

(5)

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

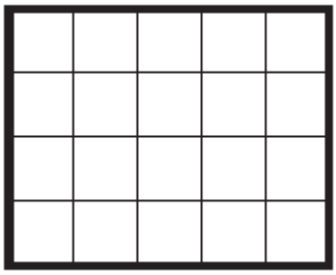


.....

(2)

(b)

(i) Shade 30% of this rectangle.



(ii) What percentage of the shape is left unshaded?

.....%

(1)

(c) What is 10% of 500?

.....

(1)

(d) Minerva needs a new gown. She sees one which originally costs £150 but is reduced in a sale by 15%. What is the sale price of the gown?

£.....

(4)

4. (a) Write the number 20400 in words.

.....

(1)

(b) Work out 3×-7

.....

(1)

(c) Work out $3 \times (2 + 7)$

.....

(1)

(d) If $2y = 16$, what is y?

.....

(1)

(e) Solve for x

(i) $x + 3 = 10$

$x =$ _____

(1)

(ii) $7 - x = 2$

$x =$ ____

(1)

(f) Here is a list of numbers.

3 6 7 9 11

From the list, write down the even number.

.....

(1)

(g) Write the ratio 2 : 6 in its simplest form.

.....

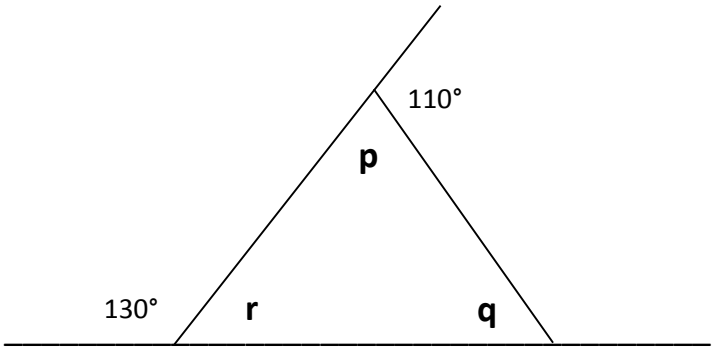
(1)

5. Fill in the missing numbers so that all the fractions are equivalent to each other

$$\frac{1}{4} = \frac{\quad}{8} = \frac{\quad}{12} = \frac{\quad}{20}$$

(3)

6. Find the missing angles marked p, q and r. Give reasons for your answers



p = _____° because _____

q = _____° because _____

r = _____° because _____

(6)

7. Calculate the following. Show your working clearly

a) 71305 + 20304

……..

b) 31054 – 257

……

c) 14 x 42

.....

d) 13680 ÷ 9

..... (8)

8. Change the following to the units indicated

a) 21 m = ……..... cm

b) 8km = ……..... m

c) 1km = ... cm

d) 420mm = ……..cm

e) 50000g = ...kg

(5)

9. Here are the first three terms of a number sequence.

3 15 75

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

.....(2)

(b) Explain how you worked out your answer.

.....

..... (1)

10. (a) Write down the value of the 2 in the number 421.

..... (1)

(b) Round 13.46 to the nearest whole number.

..... (1)

(c) Write down the number which is exactly halfway between 2.4 and 2.7.

..... (1)

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

0.15 1.15 0.02 0.2 0.002

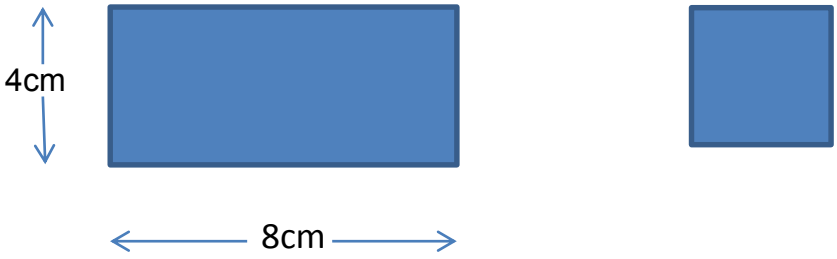
..... (2)

(e) Write 0.29 as a fraction.

..... (1)

11. The diagram shows a rectangle and a square. The perimeter of the rectangle is the same as the perimeter of the square.

(a) Work out the length of one side of the square



Length of side of square = …….cm

(3)

(b) What is the area of the rectangle? State your units clearly.

…….. (3)

(c) What is the area of the square? State your units clearly.

…….. (3)

12.

7	0	6	25	27	48	14	45

From the numbers in the box, write down

(i) a multiple of 12 .....

(ii) a factor of 36 .....

(iii) a square number .....

(iv) a prime number .....

(v) a number that is a multiple of both 3 and 5 ..... (5)

13. Harry recorded the maximum temperature and the minimum temperature on each of six days in January.

The table shows his results:

	Mon	Tues	Wed	Thurs	Fri	Sat
Maximum temperature	1 °C	3 °C	2 °C	0 °C	3 °C	4 °C
Minimum temperature	– 4 °C	–2 °C	– 4 °C	–5 °C	–3 °C	–2 °C

(a) Write down the highest temperature.

. . . . . °C

(1)

(b) Work out the difference between the maximum temperature on Tuesday and the minimum temperature on Thursday.

. . . . . °C

(2)

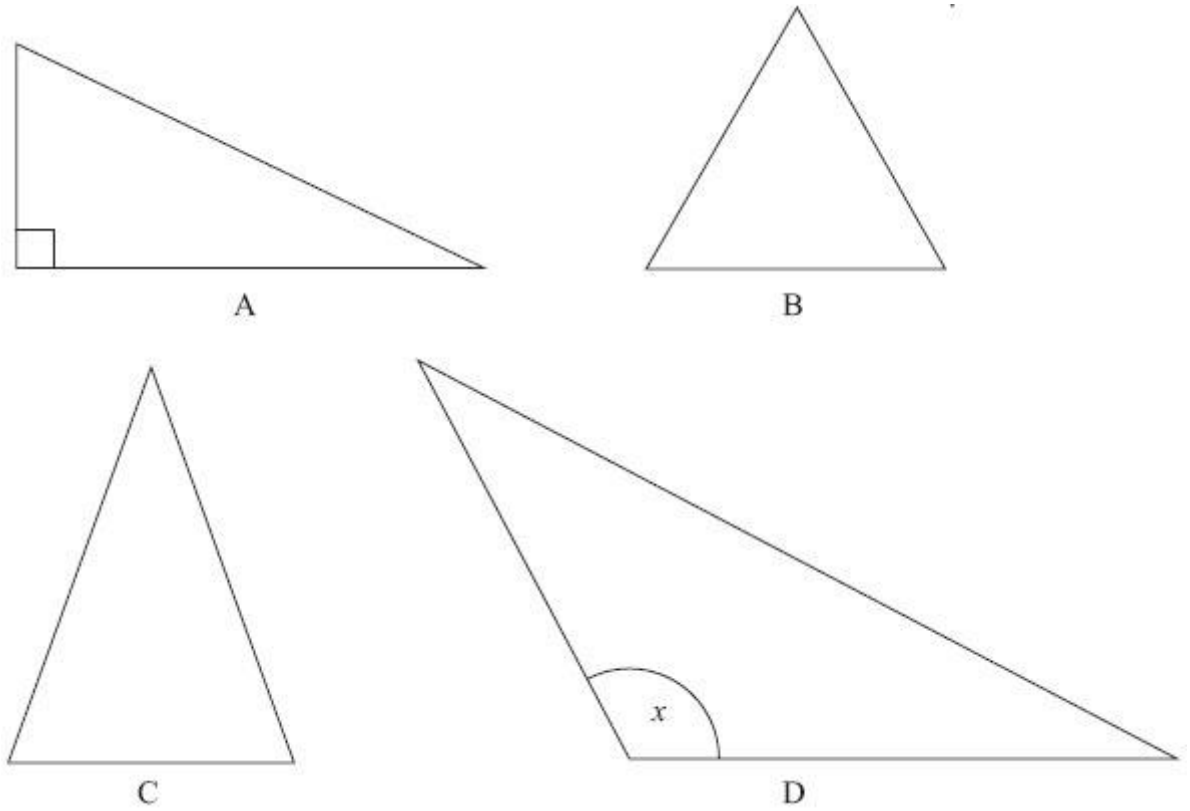
The minimum temperature on Sunday was 4 °C higher than the minimum temperature on Saturday.

(c) Work out the minimum temperature on Sunday.

. . . . . °C

(2)

14. Here are four triangles, drawn accurately.



One of these triangles is an equilateral triangle.

(a) Write down the letter of the equilateral triangle.

. . . . . .(1)

(b) Measure the size of the angle marked *x*.

. . . . . .°

(1)

(c) Measure the length of the line *EF*.
Give your answer in centimetres.



. . . . cm

(1)

15. There are 30 apples in a basket. 10 of the apples are red. The rest are green. What fraction of the apples are green? Show your working and give your answer in its simplest form.



…….. (2)

16. Hermione counts the number of cars driving down her road between 8am and 8:30am on 10 consecutive days. These were the results:

5 6 3 5 1 2 5 2 6 15

(a) Write down the mode.

..... (2)

(b) Work out the mean.

..... (3)

17. There are

5 yellow crayons
2 red crayons
3 green crayons

in a box.

Cho takes at random a crayon from the box.

Write down the probability that the crayon is green.

…… (2)

18. Neville went for a five-hour walk. His average speed was between 3km per hour and 4km per hour. Which of the following could be the distance that he travelled? You must show your working.

(a) 12km (b) 14km (c) 19km (d) 24km (e) 35km

…… (2)

19. Parvati recorded the numbers of vehicles passing her house one day.

The tally chart shows this information.

Type of vehicle	Tally
Bicycle	𝍸 |||
Bus	||
Car	𝍸 𝍸 |||
Lorry	𝍸 |
Motorbike	|||
Van	𝍸 ||

(a) How many cars did Parvati record?

. . . . . (1)

(b) Parvati recorded one type of vehicle only twice.
Which type?

. . . . . (1)

(c) Work out the total number of vehicles Parvati recorded.

. . . . . (2)

20. If a = 3, b = 6 and c = 2, work out the following:

(a) b + a – c = …….. (b) 2a ÷ c = …….. (c) 3b + 2c = ……..

(3)

END OF TEST – 100 marks – now check your work