KENT COLLEGE
CANTERBURY

Entrance Examination

Time allowed: 45 minutes

NAME: ………………………………………………

Read the following carefully:

- Start at the beginning and work through the questions as quickly and as carefully as you can.

- If you try a question and find that you cannot answer it, leave it and go on to the next.

- Do any working in the space provided

- **Do not use a calculator**

1) Calculate and show all your working,

a) 465 + 67 =

b) 4177 – 1315

Answer …………………………..(1)

Answer …………………………….(1)

c) 67 × 7=

d) 402 ÷ 6=

Answer …………………………..(1)

Answer …………………………(1)

e) £20 - £12.53

Answer …………………………...(1)

f) 41 × 63 =

Answer …………………………….(2)

2) Write down the answer to each of the following.

    a) 201 × 10   ……………….   b) 700 ÷ 10   …………….

    c) 201 × 2000   ………………   d) 52 000 ÷ 200 ……………   (4)

3) Calculate 2943 ÷ 27. Show your working.

    ………………………….   (2)

4) Work out

a) 12+6 ÷ 3   b) 26-(19+4)

Answer……………………….(1)   Answer……………………….(1)

5)

a)   Find ½ of 72   ……………..(1)

b) Find $\frac{3}{4}$ of 28   ……………..(1)

c) Find $\frac{3}{5}$ of 40   ……………..(1)

6) A balloon pump and three packs of balloons cost £9 altogether.
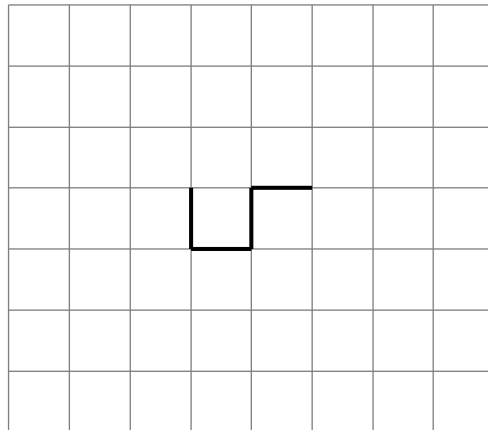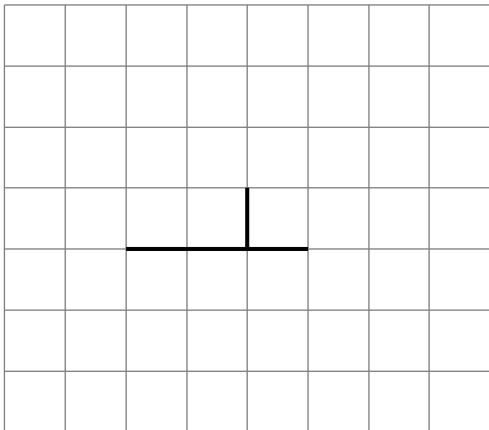   A balloon pump and four packs of balloons cost £11 altogether.

a   How much does a pack of balloons cost?

.... (1)

b   How much does a balloon pump and eight packs of balloons cost?

....
                                                                    (2)

7)   Draw an **extra line** to give each shape below **one** line of symmetry.

(2)

8)
Place the following sets of numbers in order, **smallest first**.

    a 47, 63,   18,   103, 70
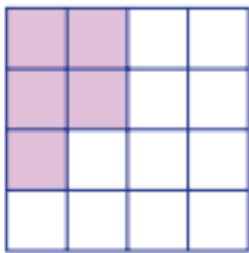
…………………………………………………………………………

    b 0.731,   0.8,   0.73   , 0.711

………………………………………………………………………

    c 1 m 43 cm,   140cm,   1m 6cm   1423 mm

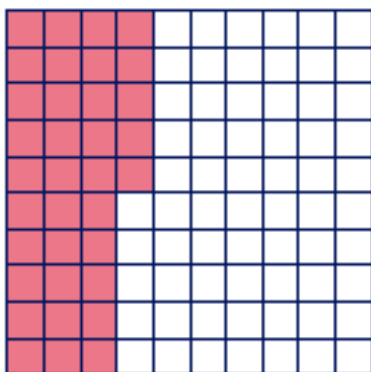………………………………………………………………………   (3)

9) a) What fraction of this shape is shaded?

                  ………………………… (1)

b) How much of this square is shaded? Write your answer as a **decimal.**

             ………………………………….(1)

10) Fill in the gaps in the sequences.

    a   7, 15, 23, 31, ……………,

    b   42, 33, 24, ………….., 6,……………   (3)

11) Write in the missing numbers.

        12 - …….. = - 1   5 × …………… = 460

        52 ÷ …………= 13 $\frac{2}{5}$ of ……………… = 12
                                                                        (4)

12) a) Work out 50% of 58m   ……………………………….(1)

        b) Work out 75% of £24   ……………………………..(1)

        c) Work out 10% of 130   ……………………………..(1)

13)   A number line starts at **–9** and finishes at **11**

What number is $\dfrac{2}{5}$ of the way along the number line?

Show your working.

....

(2)

14) A train leaves Carlisle station at 3.37pm and arrives in London at 6.48pm

How long did the journey take?   .... (1)

15)   (a)   Look at this information about recycling:

> **25** large plastic bottles can be recycled to make **1** fleece jacket.

Write the missing number in this sentence.

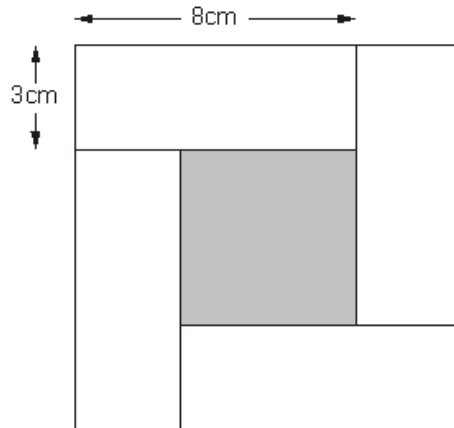**200** large plastic bottles can be recycled to make .... fleece jackets.

(1)

(b)   In a survey, **9 out of 10** people said they would like to recycle more.

What percentage of people said they would like to recycle more?

.... %

(1)

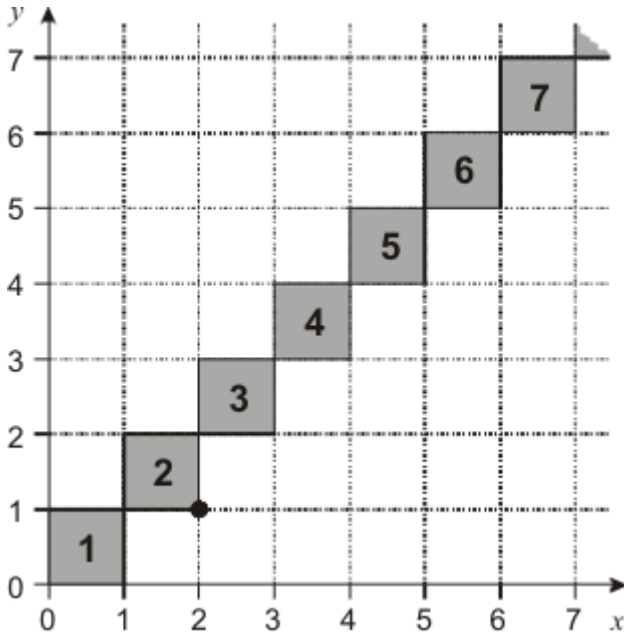16)   The diagram shows four identical white rectangles around a shaded square.

    8cm

3cm

Not drawn accurately

What is the area of the shaded square?

....

(2)

17)

I put square tiles on a large grid so that the tiles touch at the corners.
The diagram shows part of my diagonal pattern.

(a)   The **bottom right-hand** corner of **tile 2** is marked with a ●

Write the coordinates of this point.

(,   )

(1)

(b)   **Tile 4** touches two other tiles.

Write the coordinates of the points where tile 4 touches two other tiles.

(,   ) (,   )

(1)

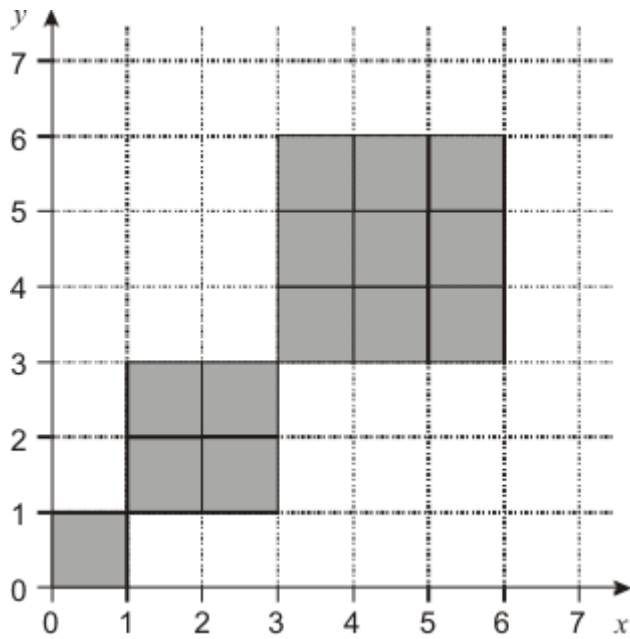(c)   Write the coordinates of the points where **tile 17** touches two other tiles.

(,   ) (,   )

(1)

(d) I have **30 tiles** to make a pattern on a grid.
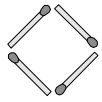
   The pattern is a series of squares.

I have used some of the 30 tiles to make my pattern.

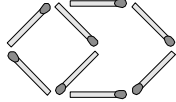Do I have enough tiles left to make the **next square**, of side length 4?
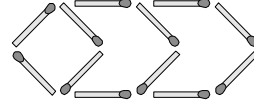
Show working to explain your answer.

(2)

18) Tom is making patterns with matches.

Pattern 1   Pattern 2   Pattern 3

a   How many more matches will Tom need to make pattern 4?

.... (1)

b   How many matches altogether will Tom need to make pattern 5?

.... (1)

c   How many matches will Tom need to make pattern 12?

.... (1)

d   Tom has a box containing 99 matches. What is the largest pattern number he can make?
Show any working.

.... (1)

19)   Mark is 3 years older than David. The sum of their ages is 89.
How old is Mark?

.... (2)

20) Some people use this rule to work out how many hours' sleep each night young
children need.

> **Subtract** the child's age in years **from 30**,
> then **divide** the result by **2**

(a)   Sanjay is **8** years old.

Use the rule to work out how many hours' sleep he needs.

.... hours

(1)

(b)   Lisa is **6** years old.

She wakes up every morning at **7am**.

Use the rule to work out what time she needs to go to sleep.

....

(2)

21)

Tariq wants to use four planks of wood to make the top of a table.

Each plank of wood is **14 cm** wide.

He wants the table to be **65 cm** wide with **equal spaces** between the planks of wood.

How much space should he leave between each of the planks of wood?

Show your working.

.... cm

(2)

22) One way to make a magic square is to substitute numbers into this algebra grid.

a + b	a − b + c	a − c
a − b − c	a	a + b + c
a + c	a + b − c	a − b

(a) Complete the magic square below using the values

a = **10**   *b* = **3**   *c* = **5**

		5
	10	
15		

(3)

(b)   Here is the algebra grid again.

a + b	a − b + c	a − c
a − b − c	a	a + b + c
a + c	a + b − c	a − b

I use **different values** for *a*, *b* and *c* to complete the magic square.

20	21	7
3	16	29
25	11	12

What values for *a*, *b* and *c* did I use?

a = ... *b* = ... *c* = ... (2)

23) In this subtraction, P, Q, R, S and T represent single digits.

$$\begin{array}{r} 7\ Q\ 2\ S\ T \\ -\ P\ 3\ R\ 9\ 6 \\ \hline 2\ 2\ 2\ 2\ 2 \end{array}$$

What is the value of P + Q + S + T?

.............................(3)

END OF TEST