

Name \_\_\_\_\_

Candidate Number \_\_\_\_\_

Room Number \_\_\_\_\_

# WITHINGTON GIRLS' SCHOOL

JANUARY 2025

MATHEMATICS

TIME: 45 MINUTES

- Try to answer all the questions.
- Write your working and your answer in the space provided after each question.
- Answers should be written in their simplest form.  
For example,  $\frac{1}{4}$  is simpler than  $\frac{2}{8}$  and the mixed number  $1\frac{1}{4}$  is simpler than  $\frac{5}{4}$ .
- If you cannot answer a question, leave it and go on to the next one.
- Use any time you have left to check your answers and go back to any questions you have left out.

Question	Total	Marker/Checker
Q1-15	16	
Q16-23	12	
Q24-28	15	
Q29-30	12	
PAPER TOTAL	55	

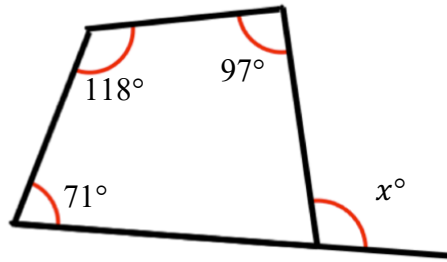
CALCULATORS MUST NOT BE USED







20 Calculate the size of the angle marked  $x$  in the diagram below.



\_\_\_\_\_ 2

21 My security code has five digits, chosen from the numbers 0 to 9. Each digit is different and none of the digits is a prime number. The five digit number is the largest possible multiple of 3.

What is my security code?

\_\_\_\_\_ 2

22 Find a multiple of 12 which lies between 190 and 200.

\_\_\_\_\_ 1

23 My kitchen floor is 3 m long and 1.2 m wide. I am going to cover it in square tiles which are 30 cm along each side. The tiles come in packs of 8.

How many packs will I need to buy to tile my floor?

\_\_\_\_\_ 2

24 Alex buys her lunch at a café.  
 She buys a sandwich costing £3.95, two biscuits costing 95p each and a coffee costing £2.80.  
 She pays with a £10 note.

How much change should she receive?

£ \_\_\_\_\_

2

25 Here is a list of numbers:  
 22, 24, 33, 37, 64, 57

From the numbers in the list, write down:

(a) A prime number \_\_\_\_\_ 1

(b) A square number \_\_\_\_\_ 1

(c) A factor of 120 \_\_\_\_\_ 1

(d) A number that is one greater than a multiple of 12 \_\_\_\_\_ 1

26 The bar chart below shows the number of projects handed in to a teacher on each day during a week in December

Day	Number of Students
Monday	4
Tuesday	5
Wednesday	2
Thursday	8
Friday	5

What was the total number of projects handed in during the week?

\_\_\_\_\_

1

27 Find the acute angle between the clock hands in each of the following pictures.

(a)



\_\_\_\_\_

(b)



\_\_\_\_\_

(c)



\_\_\_\_\_

(d)



\_\_\_\_\_

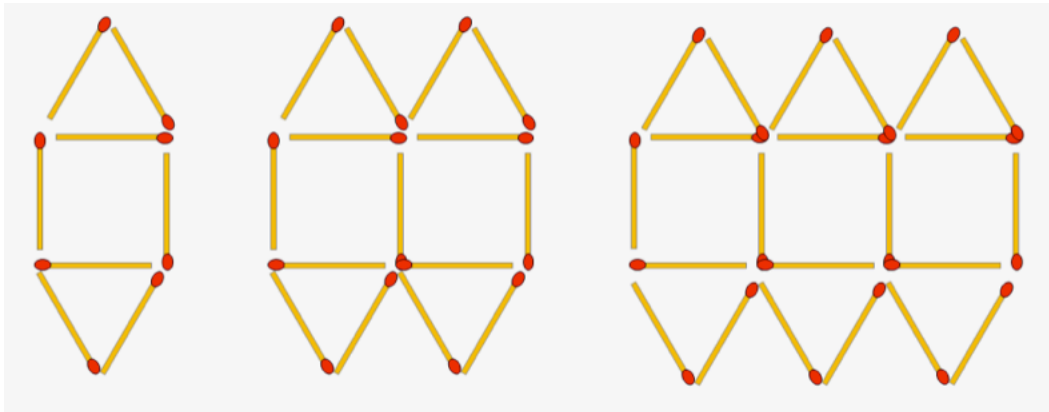
1

1

1

1

28 Dayna makes a series of patterns using matchsticks. The first three patterns are shown below.



(a) Complete the table:

Pattern number	Number of matchsticks
1	
2	15
3	
4	
5	

(b) How many matchsticks will be needed for pattern number 101?

\_\_\_\_\_

2

2

29 The country of Primonia uses only coins worth 3 dollars (\$3) and 5 dollars (\$5).

So, for example, I could pay my \$11 bill in a shop using a \$5 coin and two \$3 coins.

$$\$11 = \$5 + \$3 + \$3$$

What combination of coins should I use to pay a bill of:

(a) \$13

1

\_\_\_\_\_

(b) \$17

1

\_\_\_\_\_

In Primonia, it is polite to use the fewest number of coins possible when you pay a bill.

What is the fewest number of coins needed to pay a bill of:

(c) \$18

2

\_\_\_\_\_

(d) \$31

2

\_\_\_\_\_

30 In this question  $a \otimes b$  means “ $a$  addify  $b$ ”.

$$a \otimes b = (a \times b) + a + b$$

So  $2 \otimes 3 = (2 \times 3) + 2 + 3 = 6 + 2 + 3 = 11$

Find the values of  $w$ ,  $x$ ,  $y$  and  $z$ .

(a)  $3 \otimes 4 = w$

$w = \underline{\hspace{2cm}}$  1

(b)  $3 \otimes 0 = x$

$x = \underline{\hspace{2cm}}$  1

(c)  $3 \otimes y = 7$

$y = \underline{\hspace{2cm}}$  2

(d)  $z \otimes 2 = z + 16$

$z = \underline{\hspace{2cm}}$  2

**END OF TEST – NOW CHECK YOUR ANSWERS**