

CANDIDATE
NAME

CENTRE
NUMBER

					CANDIDATE NUMBER				

Secondary 2

MATHEMATICS

Paper 2

09/08/24
August 2024

1 hour

You must answer on the question paper.
 You will need: Calculator

INSTRUCTIONS

- Answer **all** questions.
- Use the black or dark blue pen.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided
- Do **not** use an erasable pen or correction fluid.
- You should show all your working in the booklet.
- You are allowed to use a calculator.

INFORMATION

- The total mark for this paper is 50.
- The number of marks for each question or part question is shown in brackets [].

For Teacher's Use	
Page No.	Marks
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
Total	

This document has **12** pages. Any blank pages are indicated.

1. It will take 7 workers 6 days to pick some mangoes.

Calculate how many workers are needed to pick these mangoes in 3 days.

..... [1]

2. The mass of a baby is 4kg

Each month the mass of the baby increases by 15% of its mass from the previous month.

Find the mass of the baby after 2 months

..... kg [2]

3. Naomi and Samira share some apples.

Naomi receives less than half of the apples.

Draw a ring around the possible value of the ratio of Naomi's share to Samira's share.

1:5

3:2

1:1

7:5

[1]

4. Complete these sentences.

986154 correct to three significant figures is

0.56424 correct to two significant figures is

[2]

5. (a) A number, x , rounded to the nearest 100 is 1500

Complete the inequality to show the possible value of x .

$$\dots\dots\dots \leq x < \dots\dots\dots$$

[1]

- (b) The time taken to run a race is 9.87 seconds correct to 3 significant figures.

Write down the upper limit for the time

$\dots\dots\dots$ s [1]

6. In September a coat costs \$62.50

In October the cost of the coat increases by 4% of the cost in September.

In November the cost of the coat increases by a further 14.6% of the in October.

Find the cost of the coat after both increases.

\$ $\dots\dots\dots$ [2]

7. Use the numbers in the box to complete the sentences.

$\sqrt{19}$	$\frac{19}{6}$
8^2	π

..... and are rational number.

..... and are irrational number.

[1]

8. There are 188 students in Assumption's school.

A school bus can seat 16 students.

How many school buses are needed to seat all the students?

..... buses [1]

9. Patric has a box containing 168 pencils that are pink, red or green.

The ratio of pink to red to green pencils is 2 : 5 : 7

Work out the number of red pencils in the box.

..... [2]

10. A flower is 5.4 cm tall.

The height of the flower increases by 12% each week.

Find how tall the flower will be after three weeks.

.....cm [2]

11. The length of a book is 25 cm to the nearest centimetre

Complete these statements about the length of the book.

The lower limit for the length of the book is cm

The upper limit for the length of the book is cm

[2]

12. Oliver travels 160 kilometres in $2\frac{1}{2}$ hours.

Work out his average speed.

Give your answer in kilometres per hour.

..... km/h [2]

13. The value of a car is \$16 500 and this decreases by 15% each year.

(a) Calculate the value of the car after 2 years.

\$..... [2]

(b) After how many years will the car's value first drop below \$12 000?

.....years [2]

14. Circle all the calculations that give the answer to 9^{10} .

$$9^2 \times 9^7 \times 9$$

$$3^4 \times 3^6$$

$$9^{13} \div 9^3$$

$$9^2 \times 9^7 \times 9^0$$

$$9^5 \times 9^2$$

[2]

15. Estimate and then calculate, write your answers as mixed numbers.

A. $3\frac{2}{3} + 1\frac{1}{4} - \frac{3}{6}$

Estimate: Actual:

B. $2\frac{1}{5} + 1\frac{1}{3} + 4\frac{2}{5}$

Estimate: Actual:

C. $2\frac{1}{12} + \frac{5}{6} - 1\frac{2}{3}$

Estimate: Actual:

[3]

16. Raven cuts a pieces of wood into four lengths, in the ratio 6 : 5 : 3 : 2. The longer piece is 24cm.

Find the length of the shortest piece

..... cm[2]

17.The table shows the prices of two shoes.

Shoes A	\$ 450
Shoes B	\$ 520

The price of Shoes A increases by 12%

The price of Shoes B decreases by 5%

Tick (✓) to show which shoes is more expensive after these changes.

Shoes A ☐

Shoes B ☐

Show how you worked out your answer.

[2] ☐

18. Andy puts \$250 into her bank account. The bank pays 5% per annum (per year) compound interest.

Work out the total amount in her account at the end of 3 years.

..... [2] ☐

19. Crist has $3\frac{1}{4}$ kg of flour. She uses $1\frac{1}{5}$ kg of it to make some cakes.

Estimate and then calculate how much flour she has left.

Give your answer as a fraction in it's the simplest form.

Estimate answer: [1]

Actual answer: [2]

20. Bag A contains 56 chocolate bars.

The chocolate bars in Bag A are shared between Angel and Hazel in the ratio 3:5.

Bag B also contains some chocolate bars.

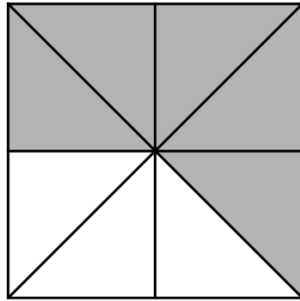
The chocolate bars in Bag B are shared between Angel and Hazel in the ratio 4:3

In total Angel receives 45 chocolate bars.

Find the total number of chocolate bars in Bag B.

..... [2]

21. The diagram shows a square split into congruent triangles.



Work out the percentage of the square that is shaded.

..... % [1]

22. $9 \times 9 \times 9^a = 1$

Work out the value of a .

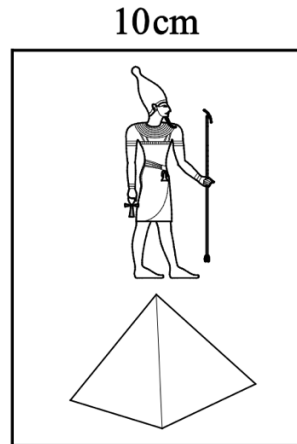
..... [1]

23. Write the ratio 150 : 250 in its simplest form.

..... : [1]

24. The diagram shows a postcard with a width of 10 cm.

The ratio of width to length of the postcard is 4 : 5



**NOT TO
SCALE**

(a) Work out the length of the postcard.

..... cm [1]

(b) Work out the area of the postcard.

..... cm² [1]

25. Work out $108 \times \frac{1}{27} \div 9^2$. Write your answer in fraction.

..... [2]

26. It takes 3 tractors 20 hours to plough some fields. How long would it take:

a. 15 tractors to plough the same field?

..... [1]

b. 6 tractors to plough the same field?

..... [1]

27. Use $>$, $<$, or $=$ to make the statement correct.

a. $\sqrt[3]{567}$ $\sqrt{100}$

b. $(-6)^2$ 35

[1]