A black background with colorful letters

Description automatically generated

CANDIDATE

NAME

CANDIDATE

NUMBER

CENTRE

NUMBER

**Secondary 1**

**MATHEMATICS**

Paper 2

You must answer on the question paper.

You will need: Black or Blue Pen

09/08/23

August 2023

**1 hr**

|  |  |
| --- | --- |
| **For Teacher’s Use** | |
| **Page No** | **Marks** |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |
| **6** |  |
| **7** |  |
| **8** |  |
|  |  |
| **Total** |  |

**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 areallowed 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 [ ].

This document has **9** pages. Any blank pages are indicated

**[Turn over]**

1. Circle the correct calculation that shows how to decrease $150 by 25%.

150 × 0.25 150 × −0.25 150 × 0.75 150 × 1.5 **[1]**

1. Write brackets in the calculation to make it correct.
2. 12 + 15 ÷ 3 – 1 = 8

 [1]

1. Jimmy works out the answer to 20 – 2 × 3 + 5

Here is his working.

20 – 2 × 3 + 5 = 20 – 6 + 5 = 20 – 11 = 9

Is Yannis’ work correct? Tick () a box.

Yes No

Explain your answer.

..................................................................................................................................

..................................................................................................................................

..................................................................................................................................

 [3]

1. Write the missing number in the box on this number line. Put the corresponding numbers in the number line as well.

-30

3

[2]

1. (a) Work out an estimate of: .

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **[2]**

**(**b) On a calculator, work out the accurate value. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **[1]**

(c ) Compare your answers to parts **a** and **b**.

Do you think your accurate answer is correct? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Explain why. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **[1]**

1. Write the letter for each calculation in the correct column of the table. One has been done for you.

**A**

6 × 8

**B**

65 × 63

**C**

(64 )2

**D**

62 × 64

|  |  |
| --- | --- |
| **Equal to 68** | **Not equal to 68** |
|  | **A** |

 [2]

1. Write 96 as a product of its prime factors. Write the answer in an Index Form.

 [2]

1. Write these decimal numbers in order of size, starting with the smallest.

−25.425, −25.81, 25.08, −25.5, 25.84

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **[2]**

1. Work out these multiplications. There are 2 answers per problem.

Show how to check your answers using estimation before giving the accurate answer.

**a** 2.2 × 5.6 **b** 1.12 × 0.35

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **[4]**

1. Complete the prime factor tree for 63

 [2]

1. Complete the prime factor tree for 230

 [2]

1. The mass of a child increases from 16.0 kg to 18.2 kg.

Work out the percentage increase.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **[2]**

1. The population of a town increases from 55 000 to 93 000.

Work out the percentage change.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **[2]**

1. The table shows some information about divisibility.

|  |  |  |  |
| --- | --- | --- | --- |
| Number | Divisible by 6 | Divisible by 8 | Divisible by 9 |
| 240 |  |  |  |
| 945 |  |  |  |
| 684 |  |  |  |
| 636 |  |  |  |

Complete the table using ticks () and crosses ().

The first row has been done for you.

 [2]

1. Work out these divisions. There are 2 answers per problem.

Show how to check your answers using estimation before giving the accurate answer.

**a** **b**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **[4]**

1. **a** On a calculator, work out the answer to .

Write down all the numbers on your calculator display.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **[1]**

**b** Round your answer to part **a** to the stated number of significant figures (s.f.).

**i** 1 s.f. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ii** 5 s.f. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **[2]**

1. Write these fractions in order of size, starting with the smallest:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [1]

1. a Increase 500 by 45%. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **[1]**

**b** Decrease 360 by 60%. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **[1]**

1. Work these out. Write your answers in their simplest form and as a mixed number when possible.

**a**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**b**

**c**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**[3]**

1. Circle the fractions in this list that are equal to recurring decimals.

**[2]**

1. There were 13 435 male and 10475 female supporters at a baseball match.

How many supporters were there altogether?

Give your answer correct to two significant figures.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[2]

1. Choose the correct digits that will make each statement true. Circle the correct number.
2. 423\_\_\_\_ is divisible by 3.

a. 2 b. 7 c. 4 d. 6

1. 1,15\_\_\_\_\_ is not divisible by 6.

a. 0 b. 1 c. 2 d. 4

 [2]

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