JUNIOR SECONDARY SEMI − EXTERNAL EXAMINATION

MATHEMATICS   **2200/2**

PAPER 2 (Structured Questions)   2 hours

Marks 85   **2018**

Additional Material: Non-programmable calculator

INSTRUCTIONS AND INFORMATION TO CANDIDATES

- Write your Candidate Name and School Name in the spaces on top of this page.
- Write your answers on the Question Paper.
- **All working must be shown clearly.**
- Write in dark blue or black pen.
- You may use a soft pencil for any rough work, diagrams or graphs.
- Do not use correction fluid.
- Do not write in the margin *For Examiner's Use*.

- Answer **all** questions.

- You may use a non-programmable calculator.
- If an answer is not exact, it should be rounded to **one** decimal place and for money give your answer to **two** decimal places.
- The number of marks is given in brackets [ ] at the end of each question or part question.

For Examiner's Use
Marker	
Checker	

This document consists of **12** printed pages.

Republic of Namibia
MINISTRY OF EDUCATION, ARTS AND CULTURE

1 **(a)** **(i)** Find the square root of 144.

Answer **(a) (i)** .... [1]

(ii) Write down the next prime number after 23.

Answer **(a) (ii)** .... [1]

(b) **(i)** Write 36 as a product of its prime factors.

Answer **(b) (i)** .... [2]

(ii) Determine the highest common factor (HCF) of 36 and 27.

Answer **(b) (ii)** .... [1]

(c) Write
   (i) 46% as a decimal.

Answer **(c) (i)** .... [1]

(ii) $\frac{12}{63}$ in its simplest form.

Answer **(c) (ii)** .... [1]

(d) Fill in the missing number

$$\frac{7}{10} = \frac{\boxed{}}{40}$$

[1]

2 In a certain school, there is a library with 400 books, of which 150 are references, 40% are fiction and $\frac{9}{40}$ are non-fiction.

(a) Calculate the number of books in the library that are

(i) non-fiction,

Answer **(a) (i)** .... non-fiction books [2]

(ii) fiction.

Answer **(a) (ii)** .... fiction books [2]

(b) During examination time, all 150 reference books were borrowed by the learners in the ratio Boys : Girls = 3 : 7.

(i) Calculate the number of reference books that were borrowed by the girls.

Answer **(b) (i)** ....reference books [2]

(ii) Calculate the percentage of the reference books that were borrowed by the boys.

Answer **(b) (ii)** .... % [2]

---

3 Use >, < or = to make the following statements true.

(a) $\frac{3}{4}$ .... 75% [1]

(b) $\frac{3}{8}$ .... $\frac{5}{8}$ [1]

(c) −5 .... −7 [1]

(d) 0.33 .... $\frac{1}{3}$ [1]

4 **(a)** Solve the inequality

$5x + 11 < 36$.

Answer **(a)** .... [2]

(b) The first four terms of a number sequence are 7, 10, 13, 16, ...

(i) Write down the next **two** terms of this sequence.

Answer **(b) (i)** .... , ... [2]

(ii) Find the nth term of the sequence.

Answer **(b) (ii)** .... [2]

(iii) Which term will be equal to 64?

Answer **(b) (iii)** .... [2]

5 Factorise completely

$p^2q + p^2r + q + r$.

Answer .... [2]

6 Solve the equation

$8y - 9 = 5y + 18$.

Answer $y =$ .... [2]

7 Simplify

$(3x^5y^6)^2$.

Answer.. [2]

_____

8 Expand and simplify.

$(3x - 4)(2x + 3)$.

Answer.. [3]

_____

9 The store sold 6 pairs of shoes in a day. The selling prices, in Namibian dollars (N$) are listed below

N$200, N$240, N$210, N$200, N$275, N$255

(a) Work out the range.

Answer **(a)** N$ .... [1]

(b) Find the mode.

Answer **(b)** N$ .... [1]

(c) Find the median.

Answer **(c)** N$ .... [2]

(d) Calculate the mean.

Answer **(d)** N$ .... [2]

[Turn over

10
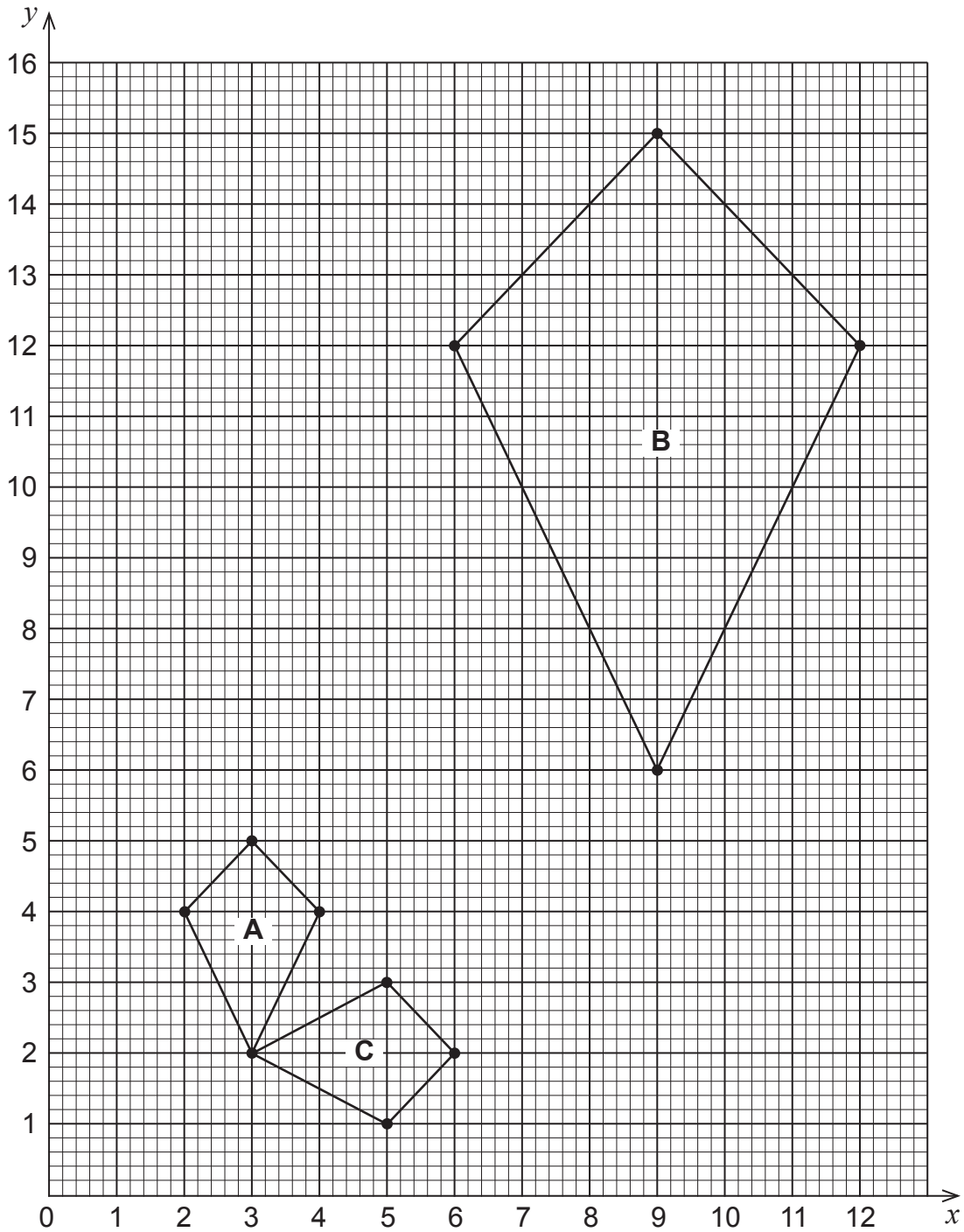
(a) Write down the equation of the line of symmetry of shape **B**.

Answer **(a)** .... [1]

(b) Describe fully the single transformation that maps

   (i) shape **A** onto shape **B**

   Answer **(b) (i)** ....

   .... [3]

(ii)   shape **A** onto shape **C**,

Answer **(b) (ii)** ....

.... [3]

(c) Reflect shape **A** in the line $y = 7$ and label it **D**. [2]

---

11 Line, l, is drawn on the grid below.
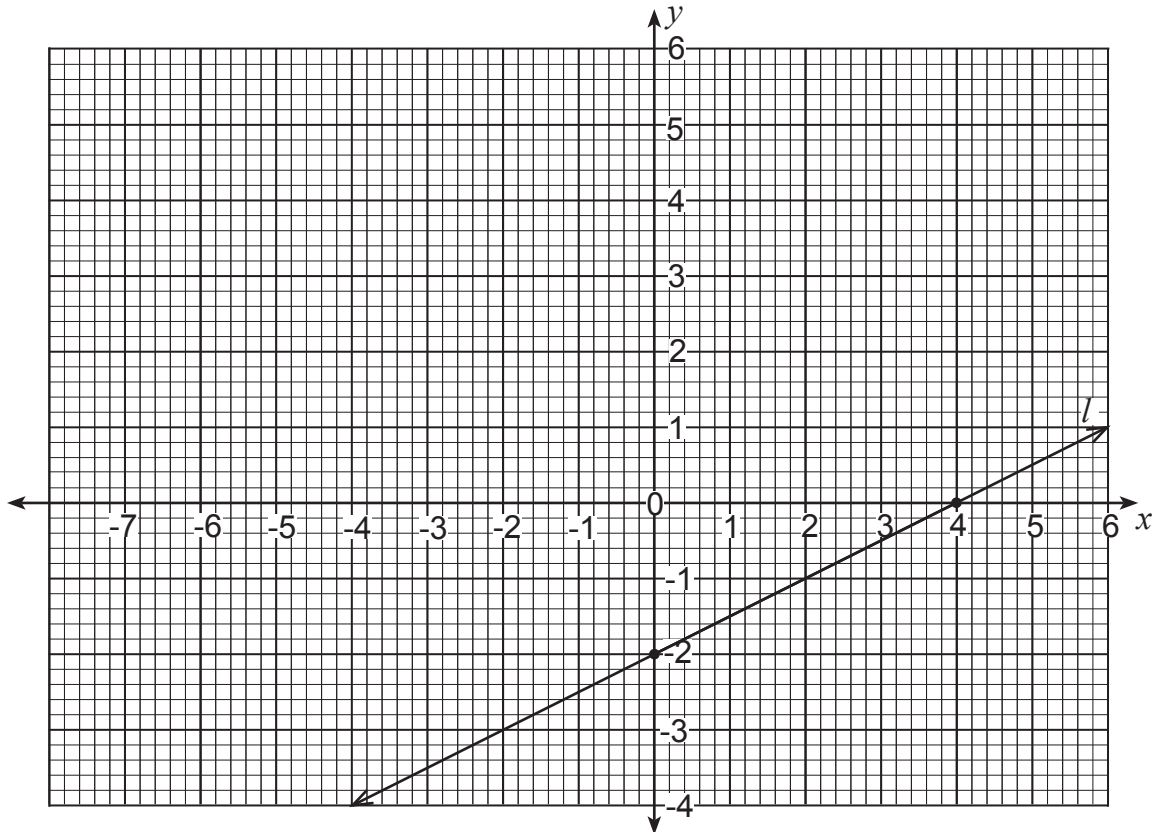
For the given line, l,

(a) write down the y-intercept,

Answer **(a)** .... [1]

(b) calculate the gradient,

Answer **(b)** .... [2]

(c) find its equation.

Answer **(c)** .... [2]

12 Diagram $ABCDE$ is an irregular polygon.
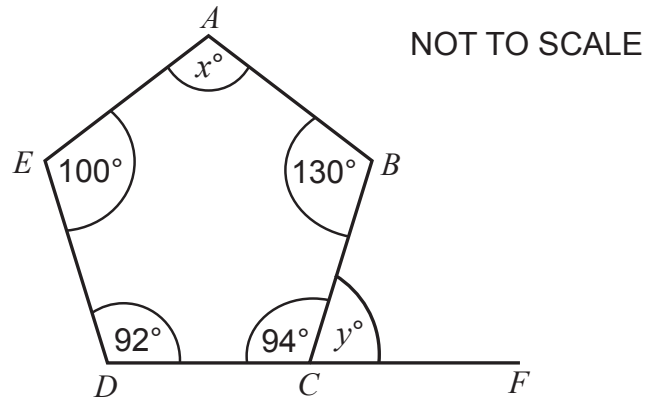
NOT TO SCALE

(a) Calculate the value of y.

Answer **(a)** y = ...° [2]

(b) Calculate the sum of interior angles of diagram $ABCDE$.

Answer **(c)** x = ...° [1]

(c) Find the value of x.

Answer **(b)** ....° [2]

13 Construct the perpendicular bisector of line WY.

W •————————————————————————————• Y

[2]

14

C

NOT TO
SCALE

10 m

63°

A

8 m

B
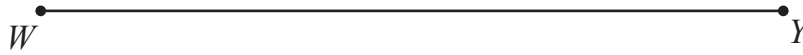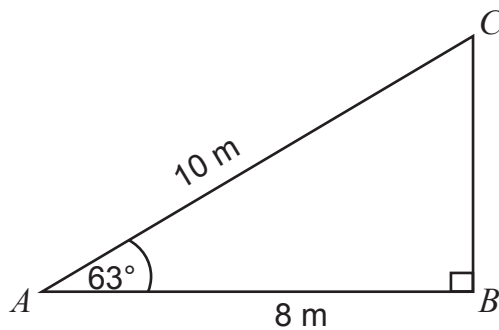
(a) Find the value of angle ACB.

Answer **(a)** ....° [1]

(b) Use pythagoras theorem to calculate the length of BC.

Answer **(b)** .... m [3]

JSSEE 2018, Mathematics Paper 2

[Turn over

15 Mr Nolwazi invests N$30 000 for 3 years at a rate of 8% per year compound interest.

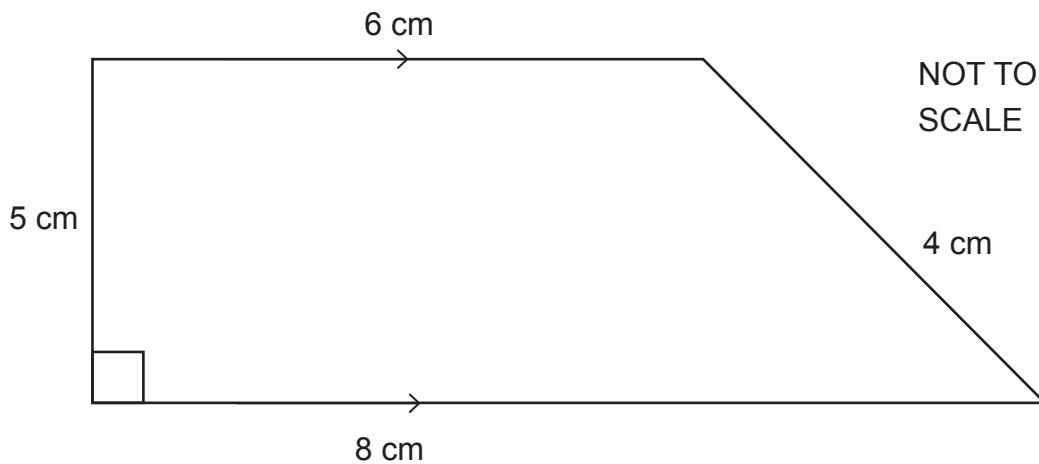Calculate the total amount that Mr Nolwazi will receive after 3 years.

Answer N$ .... [3]

16 Mbambo purchased a book online which costs US$26.60. The exchange rate is N$1 = US$0.076.

How much did he pay for the book in Namibian dollars (N$)?

Answer N$ .... [2]

17 **(a)** For the trapezium below.

6 cm

NOT TO SCALE

5 cm

4 cm

8 cm

Calculate

(i) its perimeter,

Answer **(a) (i)** .... cm [1]

(ii) its area.

Answer **(a) (ii)** .... cm^2 [2]

(b) Calculate the area of the shape below.

22 cm

NOT TO SCALE

10 cm

8 cm

14 cm

Answer **(b)** .... cm² [3]

(c)

8 cm

NOT TO SCALE

12 cm
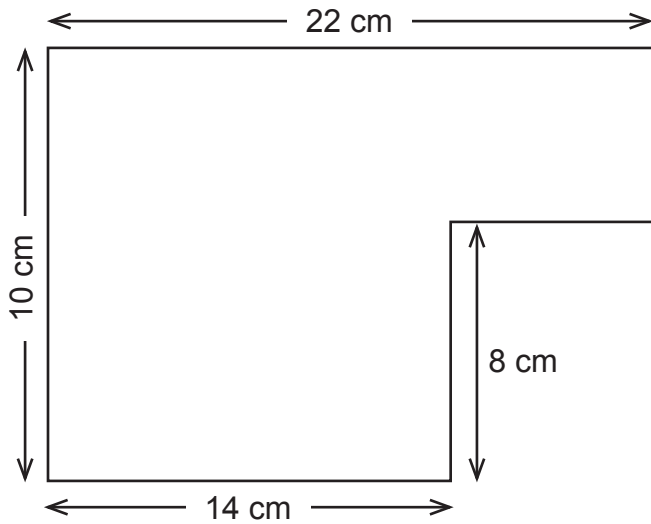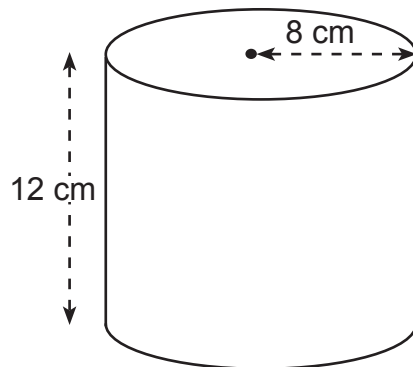
(i) Calculate the volume of the cylinder.

(use $\pi = \frac{22}{7}$)

Answer **(c) (i)** .... cm³ [2]

(ii) Write your answer in **(c) (ii)** in litres.

Answer **(c) (ii)** .... l [1]

(d) Calculate the surface area of the cuboid.

7 cm

NOT TO
SCALE

7 cm

16 cm

Answer **(d)** .... cm^2 [3]