Centre Number	Candidate Number	Candidate Name

NAMIBIA SENIOR SECONDARY CERTIFICATE

MATHEMATICS ORDINARY LEVEL 4324/3

PAPER 3 (Core) 1 hour 45 minutes

Marks 90 **2018**

Additional Materials: Geometrical instruments
Non-programmable calculator
Tracing paper (optional)

INSTRUCTIONS AND INFORMATION TO CANDIDATES

- Candidates answer on the Question Paper in the spaces provided.
- Write your Centre Number, Candidate Number and Name in the spaces at the top of this page.
- Write in dark blue or black pen.
- You may use a soft pencil for any diagrams or graphs.
- Do not use correction fluid.
- Do not write in the margin *For Examiner's Use*.

- Answer **all** questions.

- If working is needed for any question it must be shown below, or where working is indicated.
- The number of marks is given in brackets [ ] at the end of each question or part question.
- Non-programmable calculators may be used.
- If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to **three** significant figures. Give answers for angle sizes to **one** decimal place.
- For π , either use your calculator value, or use 3.142.

For Examiner's Use

Marker	
Checker	

This document consists of **14** printed pages and **2** blank pages.

Republic of Namibia

MINISTRY OF EDUCATION, ARTS AND CULTURE

For Examiner's Use

1 **(a)** Write 73 439 to the nearest 100.

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

(b) Write two thousand and eighty four as a numerical number.

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

(c) List **all** the factors of 30.

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

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2 In August 2017, people from two towns in Namibia joined hands to form an unbroken chain between their two towns.

The chain was 270 kilometres long.

(a) Write 270 kilometres

(i) in standard form,

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

(ii) in centimetres.

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

(b) If the people stood as close together as possible, so that each person occupies 45 cm, how many people were in the chain?

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

(c) If the people stood with outstretched arms so that there were 180 000 in the chain, calculate the distance, in centimetres, occupied by each person.

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

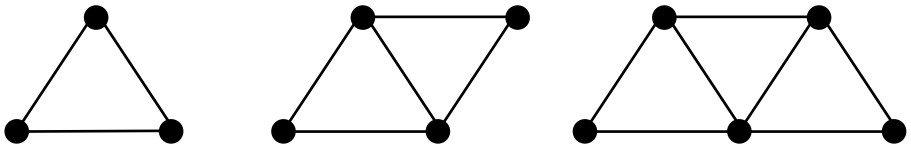
(d) The distance, d in kilometres, of 270 kilometres was given correct to the nearest 10 kilometres.

Complete the following statement about the distance, d.

Answer **(d)** ..... km $\leq d <$ ..... km [2]

For Examiner's Use

3 (a) A sequence formed by dots and triangles is shown below.



Number of triangles:	1	2	3
Number of dots:	3	4	5

Find the number of dots when there are

(i) 4 triangles,

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

(ii) 10 triangles,

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

(iii) n triangles.

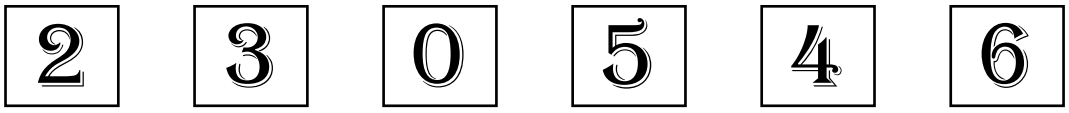
Answer **(a) (iii)** ..... dots [2]

(b) Calculate the number of triangles that will be formed by 48 dots.

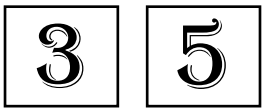
Answer **(b)** ..... triangles [1]

For Examiner's Use

4 Six cards are numbered as shown below.



One or more cards are chosen to make different numbers.

For example  makes the number 35.

(a) Choosing a card or cards, write down

(i) a two-digit square number,

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

(ii) the largest three-digit odd number,

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

(iii) a two-digit factor of 210,

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

(iv) the product of 4 and 5,

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

(v) the largest one-digit prime number,

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

(vi) a multiple of 23.

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

(b) p and q are prime numbers.

$p^2 + q = 28$.

Find p and q.

Answer **(b)** p = ...

q = ... [2]

For Examiner's Use

5 **(a)** Simplify $5m - 3n - 2m - 7n$.

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

(b) Expand $7x(x^2 - 4y)$.

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

(c) Solve the equation $2x + 3 = 15 - 4x$.

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

(d) Solve simultaneously

$x + 2y = 18$,

$3x - 2y = 2$.

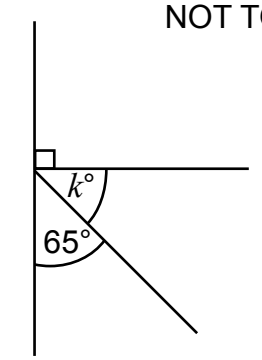
Answer **(d)** x = ...

y = ... [2]

For Examiner's Use

6 **(a)** Find the value of k.

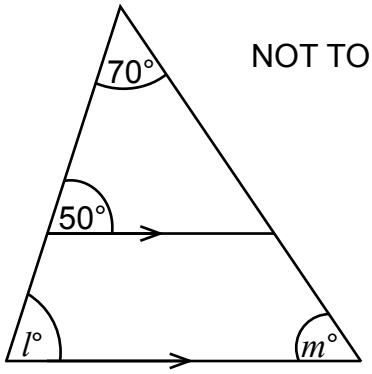
NOT TO SCALE



Answer **(a)** k = ...° [1]

(b) Find the value of l and m.

NOT TO SCALE

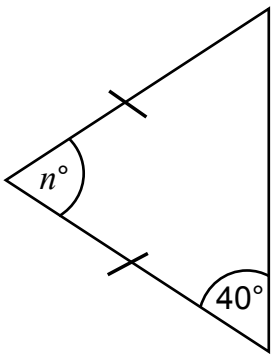


Answer **(b)** l = ...° [1]

m = ...° [2]

(c) Find the value of n.

NOT TO SCALE



Answer **(c)** n = ...° [1]

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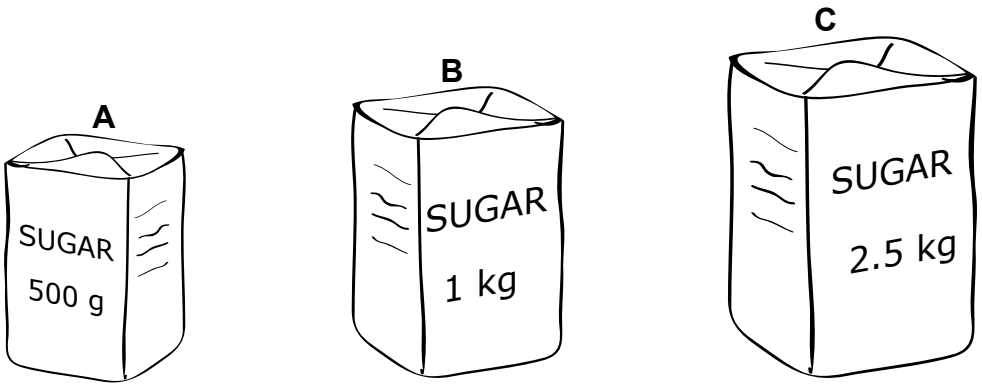
7 The diagram shows three different sized packets of sugar together with the price of each.



N$6.34 N$10.20 N$24.98

(a) Convert 500 g to kilograms.

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

(b) Work out the price per kilogram for packet **A** and **C**.

Answer **(b) A** N$.....

C N$..... [2]

(c) Which packet has the best value for money?

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

For Examiner's Use

8 Rachel, Peter and John are partners in a business and decide to share the profit from the business in the ration 4 : 3 : 5 respectively. The business makes a profit of N$240 000.

(a) Write the profit that John receives as a fraction, in its simplest form, of the total profit of the business.

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

(b) Calculate the amount of money that Peter will receive.

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

(c) Express N$30 000 as a percentage of the total profit.

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

(d) Rachel receives a profit of N$80 000.

(i) She uses $\frac{3}{8}$ of the profit for her studies.

Calculate the amount she used for her studies.

Answer **(d) (i)** N$ ..... [1]

(ii) Rachel invests N$50 000 of her profit at 12% **compound interest** per year.

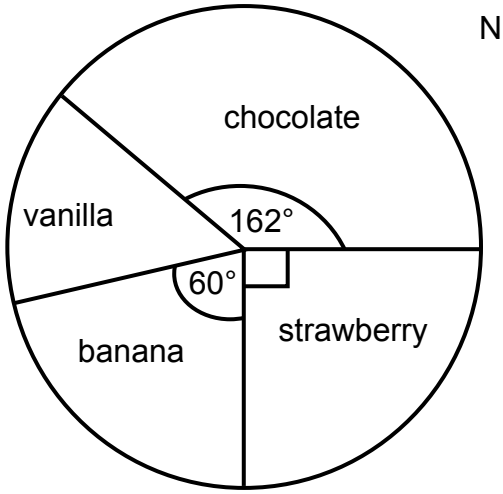
Calculate the profit made from this investment after 2 years.

Answer **(d) (ii)** N$ ..... [3]

For Examiner's Use

9 Learners in a school were asked to choose their favourite milkshake flavour.

The pie chart below shows the results.



(a) Calculate the angle which represents vanilla flavour.

Answer **(a)** .....° [1]

(b) Write down the fraction of the learners who chose the banana flavour.

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

(c) 30 of the learners chose strawberry flavour.
Calculate the total number of learners in the school.

Answer **(c)** ..... learners [3]

(d) Write down the modal flavour.

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

For Examiner's Use

10 The distance between Windhoek and Katima Mulilo is 1 200 km.

(a) An aeroplane left Windhoek at 06:55 and arrived in Katima Mulilo at 09:10.

How long did the flight take?

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

(b) A bus leaves Windhoek on Thursday at 06:20 and arrives in Katima Mulilo 15 hours and 30 minutes later.

At what time did the bus arrive in Katima Mulilo?

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

(c) The bus fare for people travelling from Windhoek to Katima Mulilo is N$400 per person.

Children under 12 years of age pay half the price.

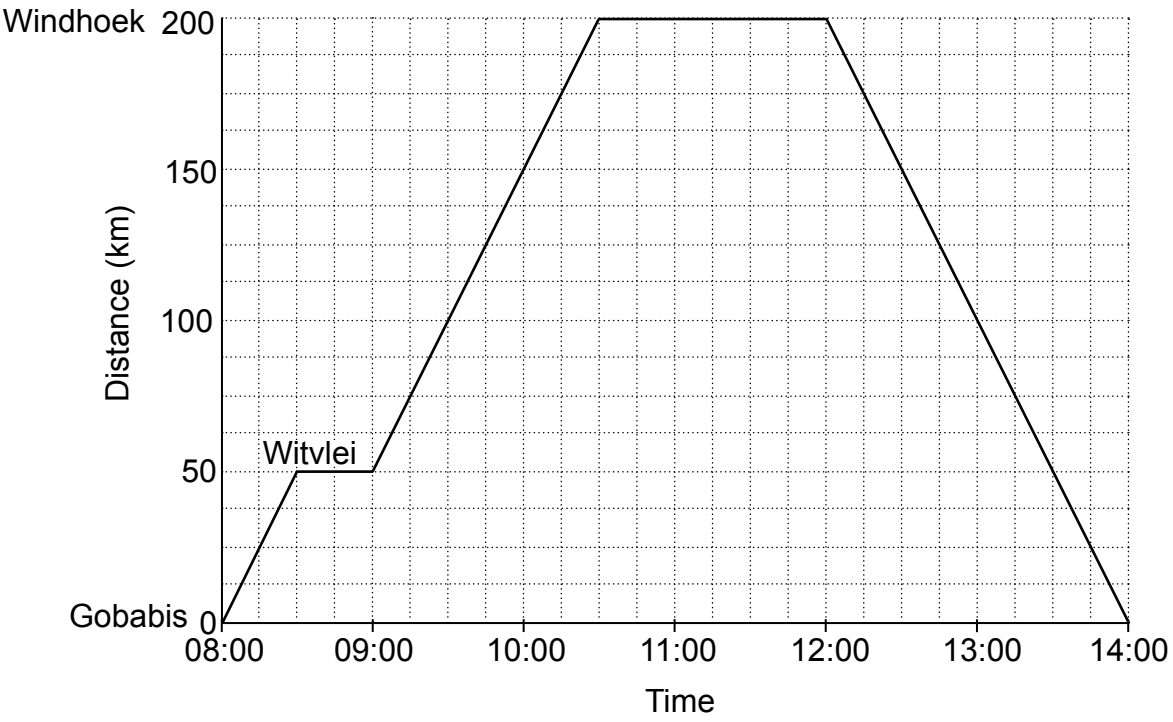
Mr Muluti, his wife and two children, aged 13 and 9, travel from Windhoek to Katima Mulilo by bus.

Calculate the total price Mr Muluti has to pay for his family for the bus fare.

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

For Examiner's Use

11 The graph below shows a return journey by car from Gobabis to Windhoek.



(a) How far is it from Gobabis to Witvlei?

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

(b) How long did the car stop in Witvlei?

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

(c) At what time did the car arrive in Windhoek?

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

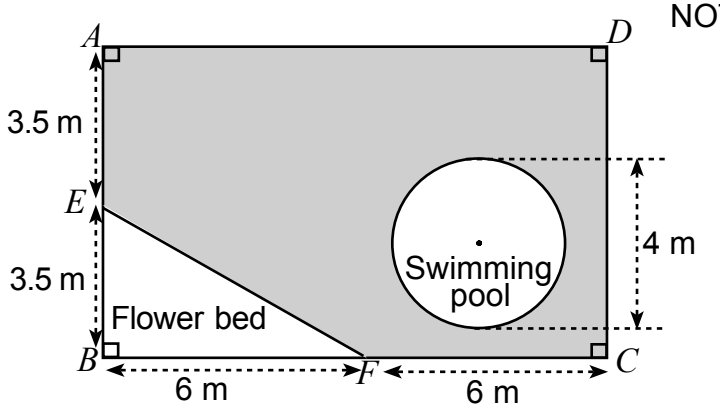
(d) Calculate the average speed of the car from Windhoek to Gobabis.

Answer **(d)** ..... km/h [2]

For Examiner's Use

12 The diagram below shows the design of a rectangular garden $ABCD$.

NOT TO SCALE



(a) Calculate the area of

(i) the circular swimming pool,

Answer **(a) (i)** .....m² [2]

(ii) the flower bed.

Answer **(a) (ii)** .....m² [2]

(b) Find the area of the whole garden.

Answer **(b)** .....m² [2]

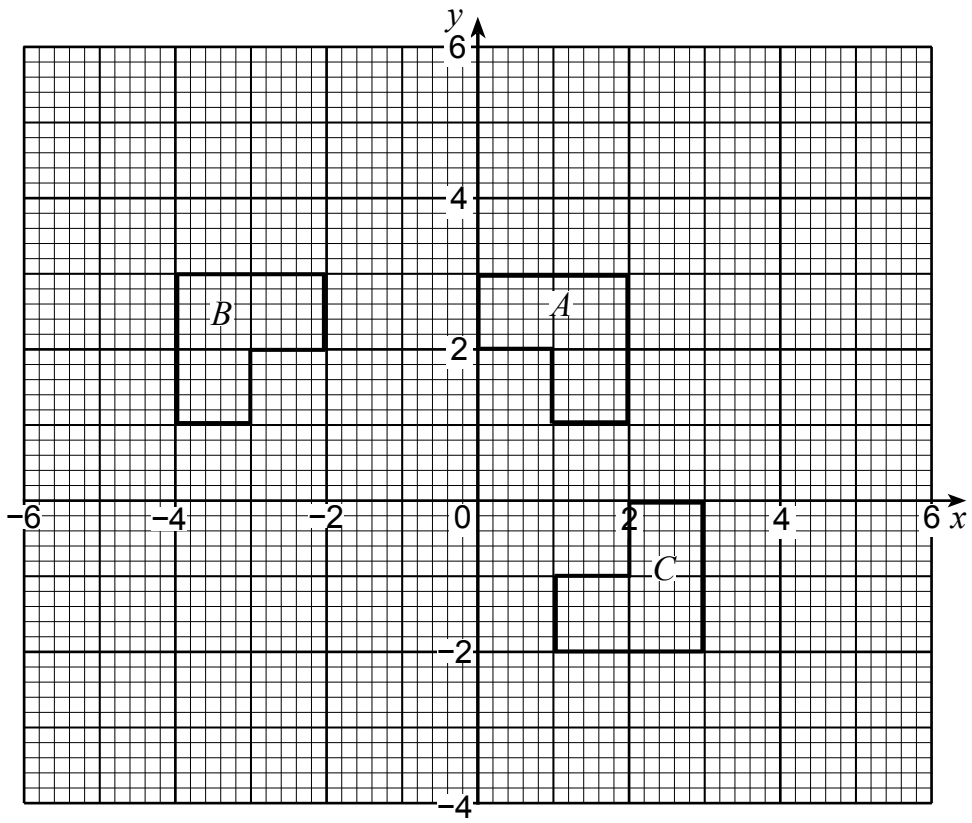
(c) The shaded area is for the lawn.

Calculate the area covered by the lawn.

Answer **(c)** .....m² [2]

For Examiner's Use

13 The diagram shows shapes A, B and C.



(a) Describe fully the single transformation that maps

(i) A onto B,

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

(ii) A onto C.

Answer **(a) (ii)** .....

..... [3]

(b) On the grid, draw accurately

(i) the translation of A by the vector $\begin{pmatrix} -4 \\ 3 \end{pmatrix}$. Label the image D. [2]

(ii) an enlargement of A with a centre of (0,1) and a scale factor of 2.

Label the image F. [2]

For Examiner's Use

14 A packet of colouring chalks contains 30 yellow chalks, 22 green chalks and 28 red chalks. A teacher takes one colouring chalk from the packet at random.

(a) Write down the colour of the chalk that the teacher is most likely to take.

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

(b) Write down the probability that a teacher takes a

(i) red,

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

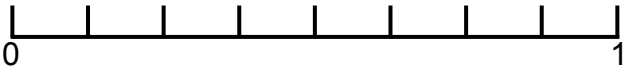
(ii) blue,

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

(iii) not a green coloured chalk.

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

(c) On the probability scale below, indicate with an arrow to show the probability that a teacher's chalk is yellow.



[1]

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