Candidate Number	Candidate Name

JUNIOR SECONDARY CERTIFICATE

MATHEMATICS **1200/2**

PAPER 2 (Structured Questions) 2 hours

Marks 85 **2019**

Additional Materials: Non-programmable calculator

INSTRUCTIONS AND INFORMATION TO CANDIDATES

- Candidates answer on the Question Paper in the spaces provided.
- Write your Candidate Number and Name in the spaces at the top of this page.

- Answer **all** the questions. **All working must be shown clearly.**
- Write in dark blue or black pen.
- You may use a non-programmable calculator.
- Do not use correction fluid.
- Do not write in the margin *For Examiner's Use*.

- If an answer is not exact, it should be rounded to **one** decimal place and for money give your answer to **two** decimal place.s
- The number of marks available is shown in brackets [ ] after each question or part question.

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Marker	
Checker	

This document consists of **13** printed pages.

Republic of Namibia

MINISTRY OF EDUCATION, ARTS AND CULTURE

[Turn over

For Examiner's Use

1 Work out

(a) $7 - 5 \times (4 - 1) + 3$,

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

(b) $\left(6 - \sqrt[3]{8}\right)^3$.

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

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2 **6 19 20 24 27 30 32 35 36 48 49 72**

From the list of numbers above, write down

(a) a factor of 12,

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

(b) a multiple of 18,

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

(c) a prime number,

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

(d) a square number,

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

(e) cube number.

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

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3 Put one of the signs =; < or > in the following statements to make each of them true:

(a) 0.03 ..... $\sqrt{0.0144}$

(b) 2.63^3..... 4.25^2

(c) 4^5 ..... 5^4

(d) $-3\frac{1}{2}$ ..... $-3\frac{1}{4}$ [4]

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4 **(a)** Annel buys a season ticket to watch her local netball team.
The season ticket costs N$595.

(i) Annel bought the season ticket online and gets a 5% discount on the N$ 595.

Work out how much Annel pays for the season ticket online.

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

(ii) A ticket to watch one match costs N$38.
Annel watches 16 matches for a season.
How much did Annel **save** by buying a season ticket online instead of 16 tickets at N$38 each?

Answer **(a) (ii)** N$ ..... [2]

(b) The netball indoor stadium in her town has 3 650 seats.
The number of people who attended one match is 2 418.

Calculate the percentage number of **empty** seats.

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

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5 A sweet shop sells lots of different types of sweets.

(a) Each large bag of mixed sweets is divided in the ratio

mint : jellies : toffees = 5 : 2 : 8.

Each large bag has a total of 180 sweets.

Calculate the number of sweets of each type in a large bag.

Answer **(a)** Mints .....

Jellies .....

Toffees ..... [3]

(b) There are 156 g of sugar in a 240 g bar of chocolate.

(i) Write 156 as a fraction of 240 in its simplest form.

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

(ii) Work out the number of grams of sugar in a **1200 grams** bar of chocolate..

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

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6 Study the table below.

WATER METER READING			DESCRIPTION	AMOUNT
PREVIOUS	**CURRENT**	**UNITS (k*l*)**	Rates and taxes	N$185.00
3348	**(a)**	27	Water consumption	N$267.50
			Water basic charge	N$35.50
			Refuse removal	**(c)**
			Sewerage	N$20.00
Total amount due				**N$564.70**

(a) Find the current water meter reading.

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

(b) Calculate the price (tarrif) per kilolitre of water.

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

(c) Calculate the charge for refuse removal.

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

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7 Sakaria won N$6 500 from a competition.
He invested $\frac{3}{5}$ of his money at 6% compound interest per year for 3 years.
He spent the remaining money on school fees.

(a) Calculate the amount that Sakaria invested.

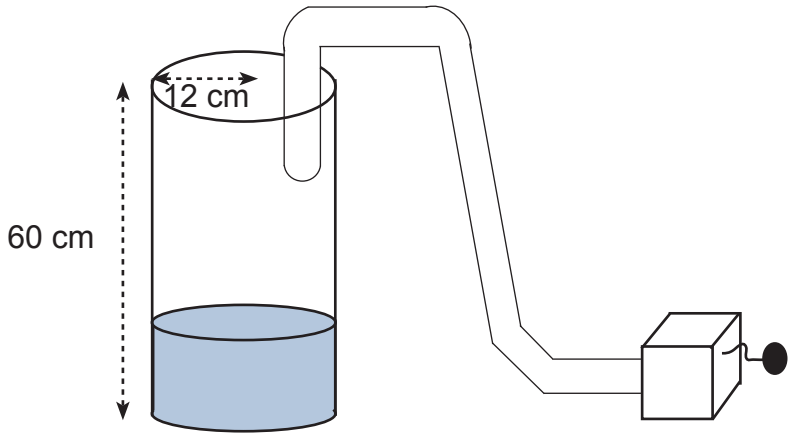
Answer **(a)** N$..... [2]

(b) Calculate the total amount he will have at the end of 3 years.

Answer **(b)** N$..... [3]

8 A pump is used to fill a cylinder with water.
The height of the water level is measured every 5 seconds.
The table shows the results obtained.

Height of water (mm)	21	42	**(b)**	84
Time taken (seconds)	5	10	15	20



(a) Use the table to find the flow rate of the water in millimetres per second.

Answer **(a)** ..... mm/s [1]

(b) Calculate the height of the water after 15 seconds.

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

(c) The cylinder has a radius of 12 cm and a height of 60 cm.
Calculate the volume of the cylinder. (Use $\pi = \frac{22}{7}$)

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

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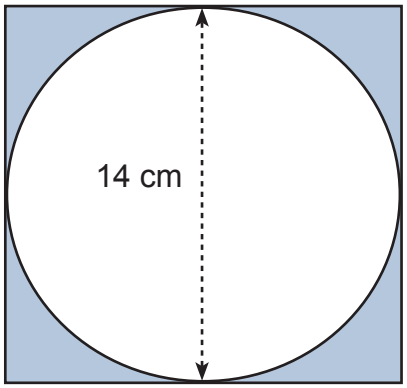
9 In the diagram a circle fits precisely inside a square.
The diameter of the circle is 14 cm.

NOT TO SCALE



(a) Find the area of the square.

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

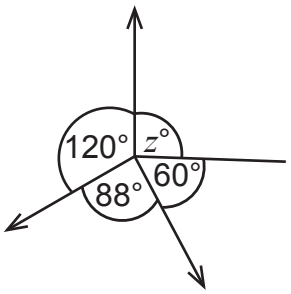
(b) Calculate the area of the circle. (Use $\pi = \frac{22}{7}$)

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

(c) Calculate the shaded area.

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

10 **(a)** Calculate the value of angle $z°$.



NOT TO SCALE

Answer **(a)** z = ...° [2]

(b) Calculate the sum of interior angles of a nonagon.

Answer **(b)** .....° [2]

(c) Write down the mathematical name for a 7-sided polygon.

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

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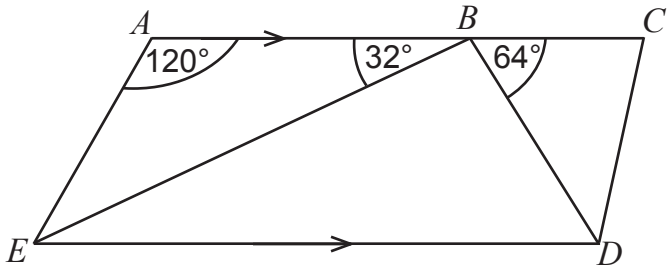

NOT TO SCALE

The diagram shows quadrilateral $ACDE$. AC is parallel to ED and B is a point on AC. Angle EAB = 120°, angle ABE = 32° and angle CBD = 64°.

(a) Work out

(i) angle EBD,

Answer **(a) (i)** angle EBD = ...° [2]

(ii) angle AEB.

Answer **(a) (ii)** angle AEB = ...° [2]

(b) Complete this statement.

Angle BED = angle EBA because they are ..... angles. [1]

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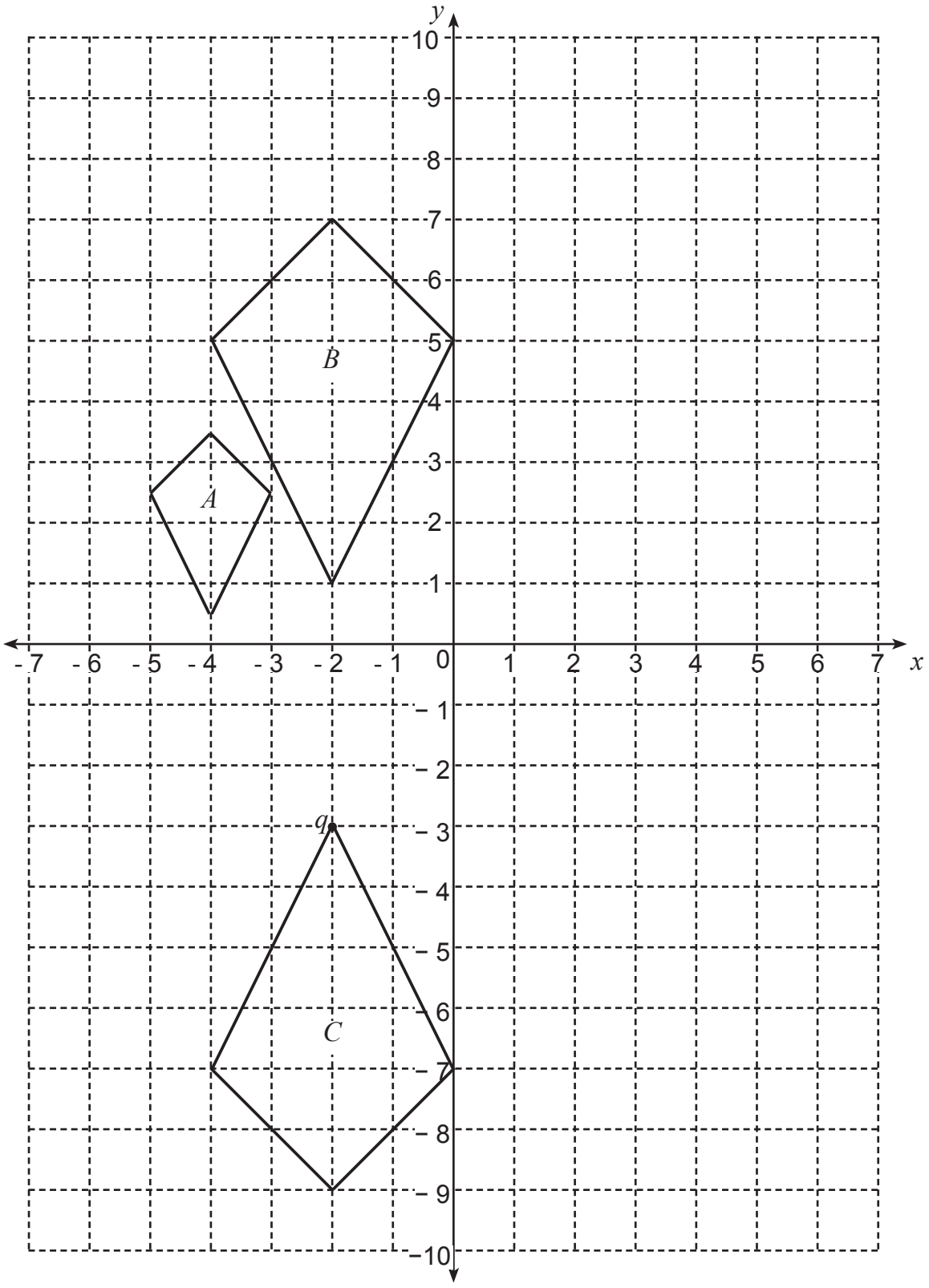
12 Three quadrilaterals are drawn on the grid.



(a) For quadrilateral B, write down

(i) its mathematical name,

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

(ii) the number of lines of symmetry.

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

(b) Describe fully the **single** transformation that maps,

(i) quadrilateral A onto quadrilateral B,

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

..... [3]

(ii) quadrilateral B onto quadrilateral C.

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

(c) On the grid, draw the image of quadrilateral C after a reflection in the line of y − axis. Label it D. [2]

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13 **(a)** Simplify $\frac{a^7}{a^3}$.

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

(b) Given that $8g - 9h$.

Find the value of this expression when $g = 5$ and $h = -3$.

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

(c) Solve the equation $4x - 7 = 29$

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

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14 Toby thinks of a number, multiplies it by three and then adds four.

(a) If the number he thinks of is x, write down an algebraic expression in terms of x for the result.

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

(b) His answer is 25.

(i) Write down an equation in x.

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

(ii) Solve the equation in part **(b)(i)** to find the number he thought of.

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

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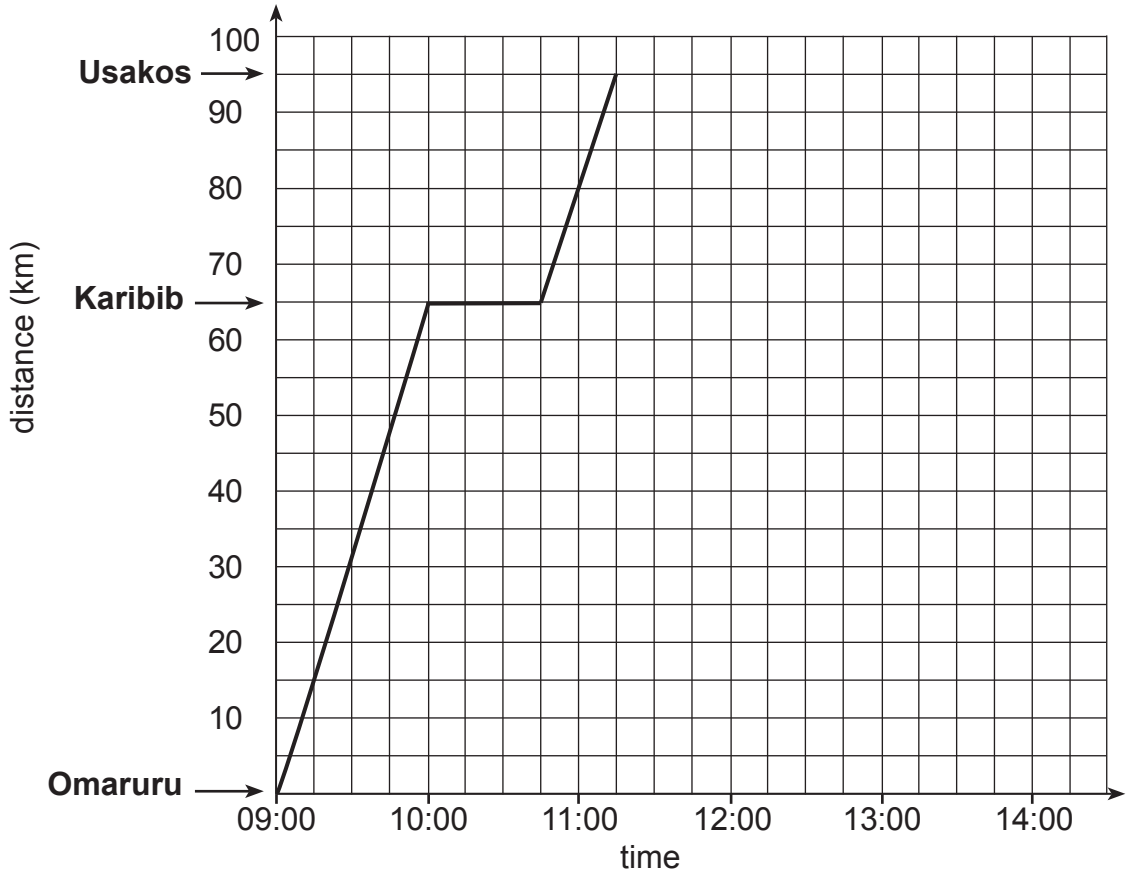
15 The graph shows a journey by the car from Omaruru to Usakos.



Use the graph to answer the following questions.

(a) How far is it from Omaruru to Usakos?

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

(b) How long does the car stop at Karibib?

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

(c) What time did the car arrive at Usakos?

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

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16 The garage sold 6 cars last week.

The selling prices, in Namibian dollars, are listed below.

N$920, N$1 070, N$3 100, N$2 240, N$2 650, N$1 840.

Calculate the mean price.

Answer N$ ..... [2]

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17 Nadia has a bag containing 15 mint sweets, 30 fruit sweets, 20 chocolate sweets and 35 toffee sweets. She takes a sweet from the bag at random.

What is the probability that she chooses

(a) a chocolate,

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

(b) mint,

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

(c) marshmallows (jerrybaby).

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

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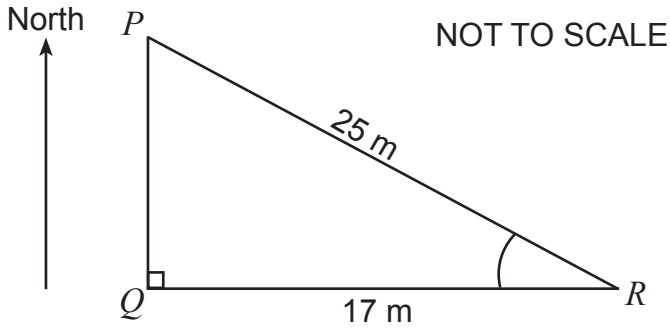
18 In triangle PQR, angle PQR = 90°, PR = 25 m and QR = 17 m.



(a) Write down the bearing of R from Q.

Answer **(a)** .....° [1]

(b) Calculate the length of side PQ.

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