JUNIOR SECONDARY CERTIFICATE

MATHEMATICS   **1200/2**

PAPER 2 (Structured Questions)   2 hours

Marks 85   **2018**

Additional Material: 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** 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 places.
- The number of marks available is shown in brackets [ ] after each question or part question.

For Examiner's Use	
Marker	
Checker	

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

Republic of Namibia

MINISTRY OF EDUCATION, ARTS AND CULTURE

1 **(a)** Work out $\sqrt{88} - \sqrt{49} + \sqrt{9}$. Write down your **full** calculator display.

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

(b) Write your answer in **(a)** to 2 decimal places.

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

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2   5   6   10   11   21   101   125   128

From the list of numbers above choose

(a) a prime factor of 33,

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

(b) a cube number,

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

(c) a multiple of 7,

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

(d) a power of 2.

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

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3   Choose one of the signs =; < or > to make the following statements true.

(a) 5.6729×10^{-3} .... 5.213×10^{-2}.

(b) $\left(\sqrt{\frac{1}{4}}\right)^{2}$ .... $\left(\frac{1}{2}\right)^{3}$.

(c) 2^{4} .... 4^{2}. [3]

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4   Arrange the following numbers in order of size, starting with the smallest.

$0.25,$ $\left(\frac{1}{2}\right)^{0},$ $8,$ $\frac{1}{8}$

Answer .... < .... < ....< .... [2]

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5 On a cold Saturday winter evening, the temperature in Thadeus's room was -2°C. His sister Natalia was using a heater and her room temperature was 25°C.

Calculate the difference in temperature between Thadeus' and Natalia's room.

Answer...................................... °C [2]

6 The ratio of Obert's height to Vickey's height is 6 : 5.

(a) Obert's height is 180 cm.
Calculate Vickey's height.

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

(b) The mass of Obert and Vickey is in the same ratio as their heights. The total of their masses is 121 kg.
Find Obert's mass.

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

7 (a) List all the factors of 20.

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

(b) Write 35 as a product of its prime factors.

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

(c) Find the lowest common multiple of 20 and 35.

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

[Turn over

8 The population of Divundu town is 5 430. Write this population in standard form.

Answer .... [2]

9 A ship has sufficient food to supply 600 passengers for 3 weeks.
How long would the food last for 800 passengers if they all eat at the same rate?

Answer .... weeks [2]

10 Expand and simplify $3x + 2(x + 1)$.

Answer .... [2]

11 Solve the equation $6 + 2a = 3$.

Answer $a = $ .... [2]

12 Pandu sell fruits and vegetable after school at their mother's stall at the open market. Her mother pays her 8% of the total profit for the day. If the mother made a profit of N$213 on a certain day.
Calculate how much Pandu's mother must pay her for that day?

Answer N$ .... [2]

13 The cash price of a smartphone is N$14 750.
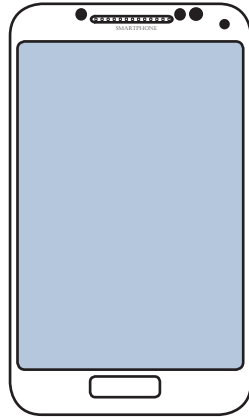
There are two possible options to buy the smartphone.

OPTION 1: To get a personal bank loan of N$14 750 at 27% simple interest for 2 years.

(a) Calculate the interest to be paid to the bank.

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

(b) Find the total amount to be paid after 2 years to the bank.

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

OPTION 2 : To buy it on a hire purchase, with 20% deposit of the cash price and 24 monthly installments of N$920 each.

(c) Calculate the deposit.

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

(d) Work out the total amount to be paid on hire purchase.

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

(e) Determine which of the two options is cheaper.

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

[Turn over

14 Ms Ochurus's taxable income is N$80 000 per year.

Her tax is calculated as follows : **N$750 plus 18% of the taxable income.**

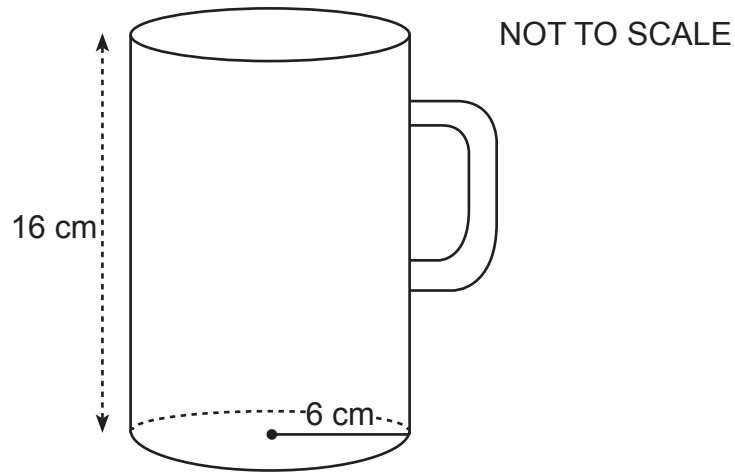**(a)** Calculate the amount of tax Ms Ochurus pays per year.

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

(b) Work out the amount of tax she pays per month.

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

15 The diagram shows a glass jug. The jug is a cylinder of radius 6 cm and a height of 16 cm.

NOT TO SCALE

16 cm

6 cm

(Use $\pi = \frac{22}{7}$ or 3.142)

(a) (i) Calculate the area of the base of the jug.

Answer **(a) (i)** .... cm² [2]

(ii) Calculate the volume of the jug in cm³.

Answer **(a) (ii)** .... cm³ [2]

(iii) Convert your answer in **(a) (i)** to litres (l).

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

(b) If there is 1 650 cm³ of water in the jug.

(i) Calculate the height of water in the jug in centimetres.

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

(ii) How many 330 cm³ glasses can be filled from the 1 650 cm³ of water in the jug?
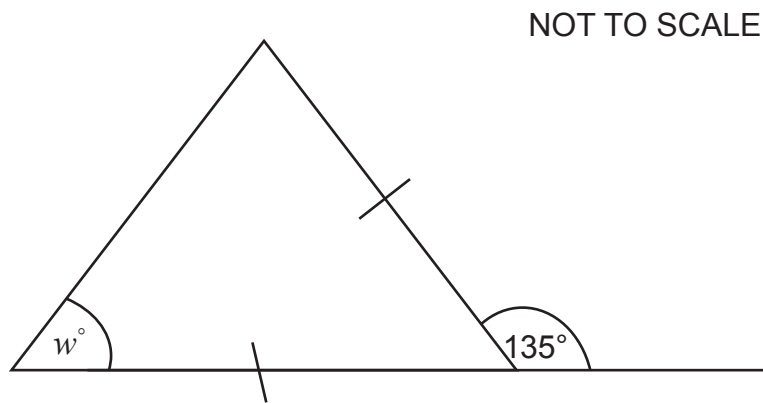
Answer **(b) (ii)** .... glasses [1]

[Turn over

16 **(a)**

NOT TO SCALE
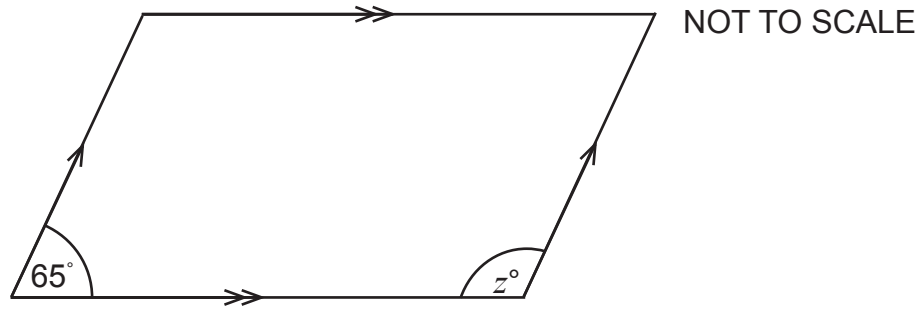
Calculate the value of z.

Answer **(a)** z = ...°   [2]

(b)

NOT TO SCALE

Find the value of w.

Answer **(b)** w = ...°   [2]

17 The diagram shows a regular polygon.

NOT TO SCALE
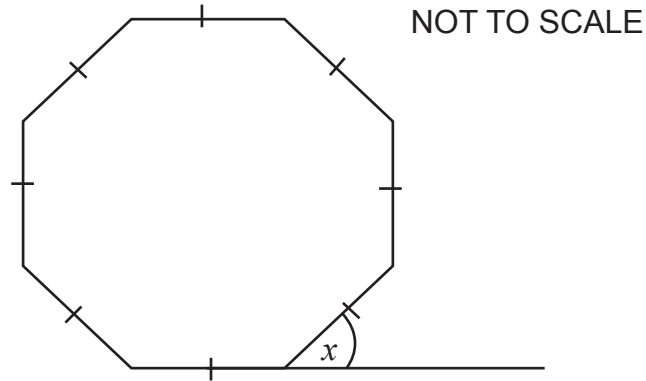
(a) Give a geometrical name for the polygon.

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

(b) Calculate the exterior angle, x, of the polygon.

Answer **(b)** x = ...° [2]

[Turn over

18
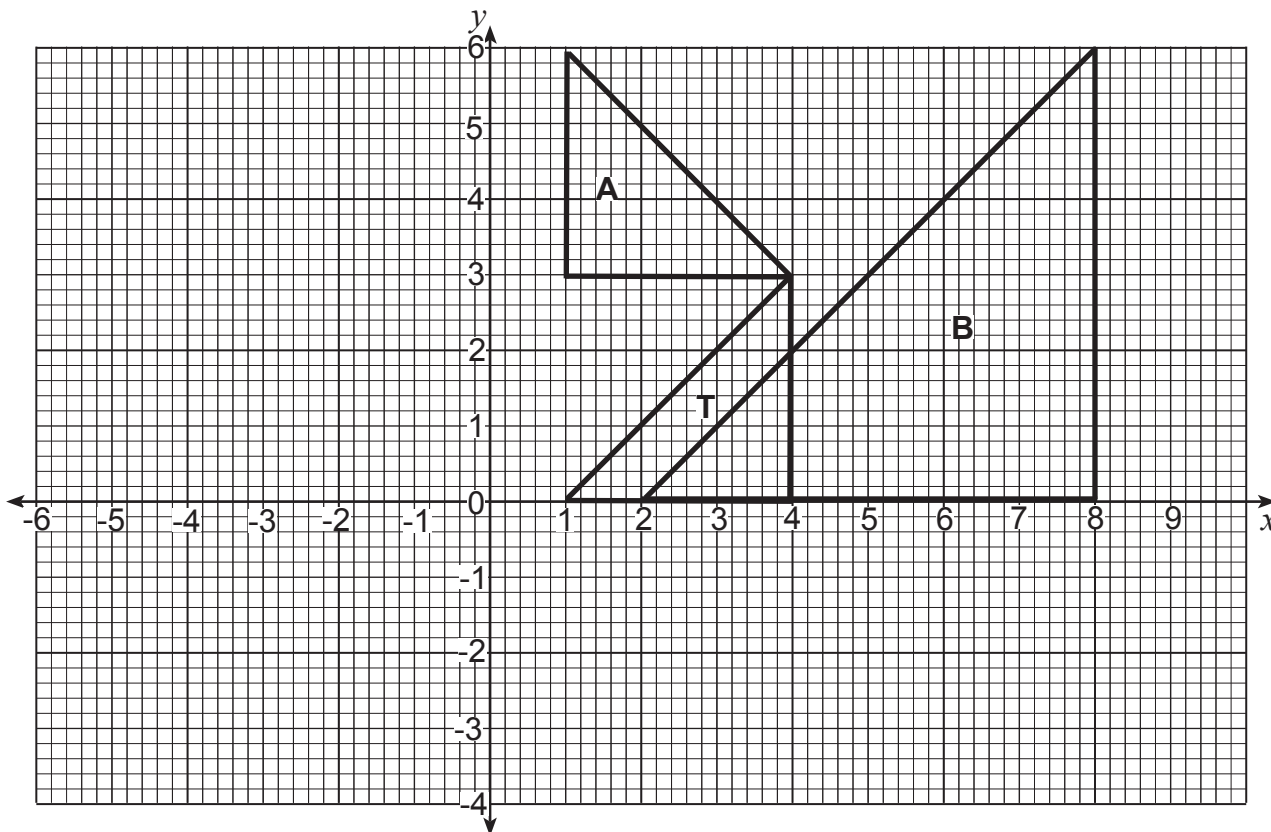
(a) Describe fully the single transformation that maps triangle **T** onto triangle **A**.

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

.... [3]

(b) Triangle **B** is an enlargement of triangle **T**, give

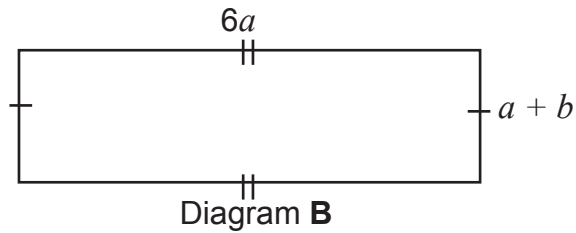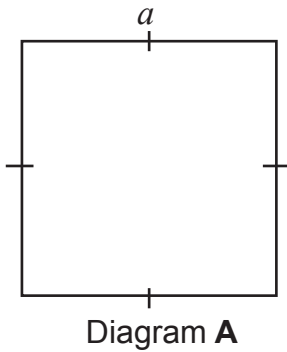**(i)** the scale factor of the enlargement,

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

(ii) the centre of enlargement.

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

(c) Reflect triangle **T** in the line x = -1. Label it **C**. [2]

19 Diagram **A** is a square and diagram **B** is a rectangle.

Diagram **A**

Diagram **B**

(a) Find the area of diagram **A** in terms of a.

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

(b) Find the perimeter of diagram **B** in terms of a and b.

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

(c) If a = 4 cm and b = 5 cm.

Work out the perimeter of diagram **B**.

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

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20 The diagram shows a line graph which passes through the points **P** and **Q**.
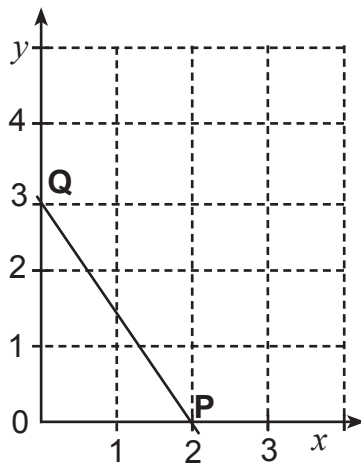
(a) Determine the y-intercept of the line.

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

(b) Write down the co-ordinates of point **P**.

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

(c) Find the gradient of line **PQ**.

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

[Turn over

21 Khobetsi keeps a record of the marks he received in ten tests. The frequency table below shows his results.

Marks	7	8	9	10
Frequency	5	2	2	1

(a) In how many tests did Khobetsi receive 9 marks?

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

(b) (i) Find the mode of the marks.

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

(ii) Find the mean mark.

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

22 Cornè chooses a card at random from the following cards.

| A | F | R | I | C | A |
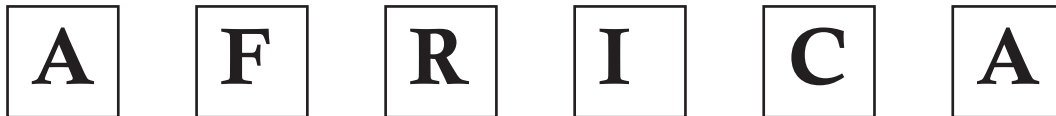
Find the probability that the letter taken is

(a) an **A**,

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

(b) a **C**,

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

(c) a **T**.

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

23 The diagram shows a flagpole (BC). A is a point on the ground with AB = 9 m and AC = 6.5 m.

B

NOT TO SCALE

9 m

$x°$

A   6.5 m   C
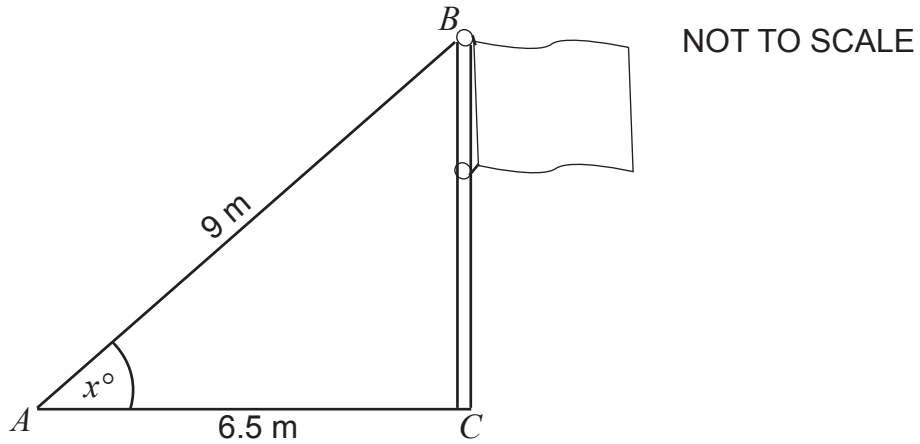
(a) Calculate the value of x.

Answer **(a)** x = ...° [2]

(b) Work out the height of the flagpole.

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