

Centre Number	Candidate Number	Candidate Name
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**NAMIBIA SENIOR SECONDARY CERTIFICATE**

**MATHEMATICS ORDINARY LEVEL**

**4324/3**

PAPER 3 (Core)

1 hour 45 minutes

Marks 90

**2020**

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  $\pi$ , either use your calculator value, or use 3.142.

**For Examiner's Use**

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Marker

Checker

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



Republic of Namibia

**MINISTRY OF EDUCATION, ARTS AND CULTURE**

1 The first four terms in a sequence are

2, 5, 10, 17, ...

(a) Write down

(i) the next two terms,

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

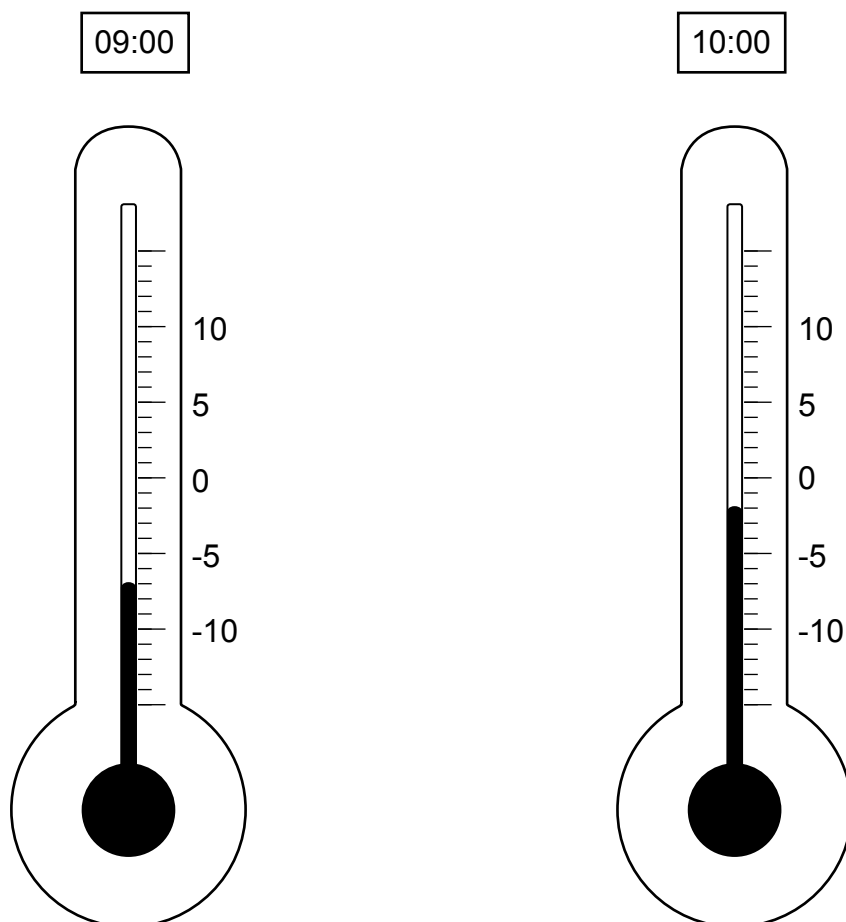
(ii) the  $n^{\text{th}}$  term.

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

(b) Calculate the 15<sup>th</sup> term.

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

2



A freezer is switched off at 09:00 to defrost. The diagrams show the temperatures in the freezer at 09:00 and one hour later at 10:00.

(a) What was the temperature in the freezer when it was switched off?

Answer (a) ..... °C [1]

(b) By how many degrees did the temperature rise between 09:00 and 10:00?

Answer (b) ..... °C [2]

(c) The temperature rose again by the same amount in the next hour.  
Calculate the temperature in the freezer at 11:00.

Answer (c) ..... °C [2]

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3 Copper and tin are mixed to make bronze in the ratio 3 : 7.

(a) How much copper is needed to mix with 42 grams of tin?

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

(b) Copper is sold at N\$ 54.40 per kg.

How much should be spent on copper to make 12 kg of bronze?

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

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- 4 Some teachers and learners want to go to the theatre. The following information is available.

Ticket prices	
Learner	N\$ 30.75
Teacher	N\$ 40.25
For every 20 learners, a teacher receives a free ticket	

Five teachers go to the theatre with 75 learners.

- (a) Calculate the total cost for the tickets.

Answer (a) N\$..... [3]

- (b) The play is in three parts. Each part lasts 35 minutes. There is a 10 minute interval between each part. The first part starts at 17:30.

Work out the time that the play ends.

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

- (c)  $\frac{3}{5}$  of the learners are girls.

Calculate the number of boys.

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

- 5 Selma buys a kitchen set on hire purchase. The cash price of the set is N\$ 24 000. A store arranges its own hire purchase terms as follows:
- deposit 25% of the cash price,
  - after the deposit is paid, the **balance** is increased by 20%,
  - this amount is then divided by 12 to give monthly installments.

(a) Calculate the deposit that Selma has to pay.

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

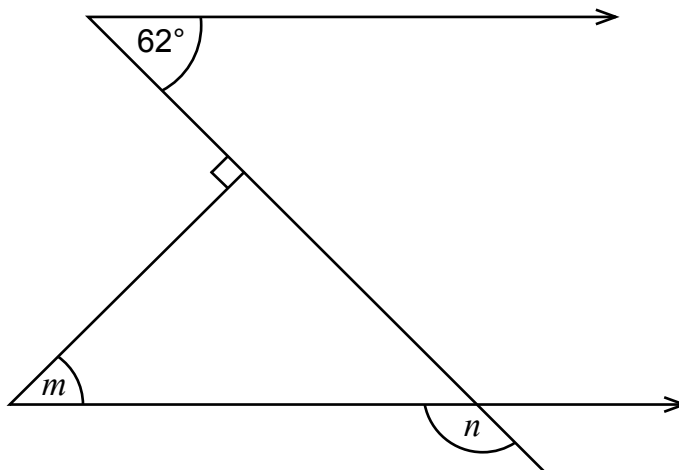
(b) Calculate her monthly installments.

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

(c) Express the difference between the cash price and the hire purchase price as a percentage of the cash price.

Answer (c) .....% [3]

6 Find the size of the angles marked  $n$  and  $m$  in the figure below.



NOT TO  
SCALE

Answer  $n =$  .....° [2]

$m =$  .....° [2]

7 (a) Expand and simplify

$$6(2 - c) - 4(c - 2).$$

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

(b) It is given that  $a = 2b + c - d$ .

(i) Calculate the value of  $a$  when  $b = 2$ ,  $c = 3$ ,  $d = 1$ .

Answer (b)(i)  $a =$  ..... [2]

(ii) Make  $b$  the subject of the formula in  $a = 2b + c - d$ .

Answer (b)(ii)  $b =$  ..... [2]

8 (a) Write down

(i) the number two million, four hundred and seventy in figures,

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

(ii) the next square number after 64,

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

(iii) a common multiple of 9 and 12,

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

(iv) a prime number between 50 and 60.

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

(b) Complete the calculations

(i)  $9 + 8 \div 2 =$  ..... [1]

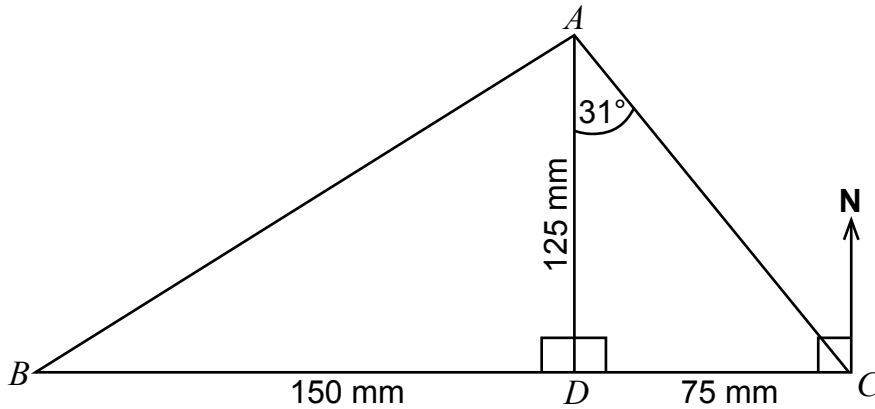
(ii)  $(6 - 4) \div$  ..... = 2 [1]

- 9 Three towns  $A$ ,  $B$ ,  $C$  form a triangle with sides  $AB = 40$  km,  $AC = 24$  km and  $BC = 32$  km.
- (a) Using a scale of 1 cm to represent 4 km, construct triangle  $ABC$  to show the locations of the towns.

- (b) On triangle  $ABC$ , draw the locus of points that are [2]
- (i) the same distance from  $B$  and  $A$ , [2]
- (ii) 16 km from  $C$ . [1]
- (c) Tunependa wishes to build a shop in the region that is **closer to  $B$  than to  $A$**  and **is less than 16 km from  $C$** . [1]  
Shade the region where the shop can be built.
-

10 The height  $AD$  of triangle  $ABC$  is 125 mm.

$CD = 75$  mm and  $DB = 150$  mm.



NOT TO  
SCALE

Calculate

(a) angle  $BAD$ , correct to the nearest degree,

Answer (a) ..... $^\circ$  [2]

(b) the bearing of  $A$  from  $C$ ,

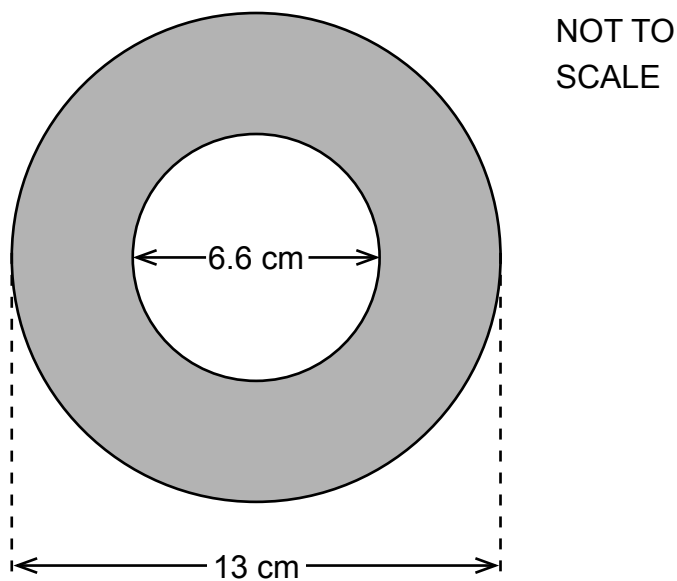
Answer (b) ..... $^\circ$  [2]

(c) the length  $AB$  correct to 3 significant figures.

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



- 11 A compact disk (CD) may be used for storage of data. The useful part of the CD is the shaded area.



Calculate

- (a) the outer circumference of the CD correct to 1 decimal place.

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

- (b) the area of the CD that is useful for storage.

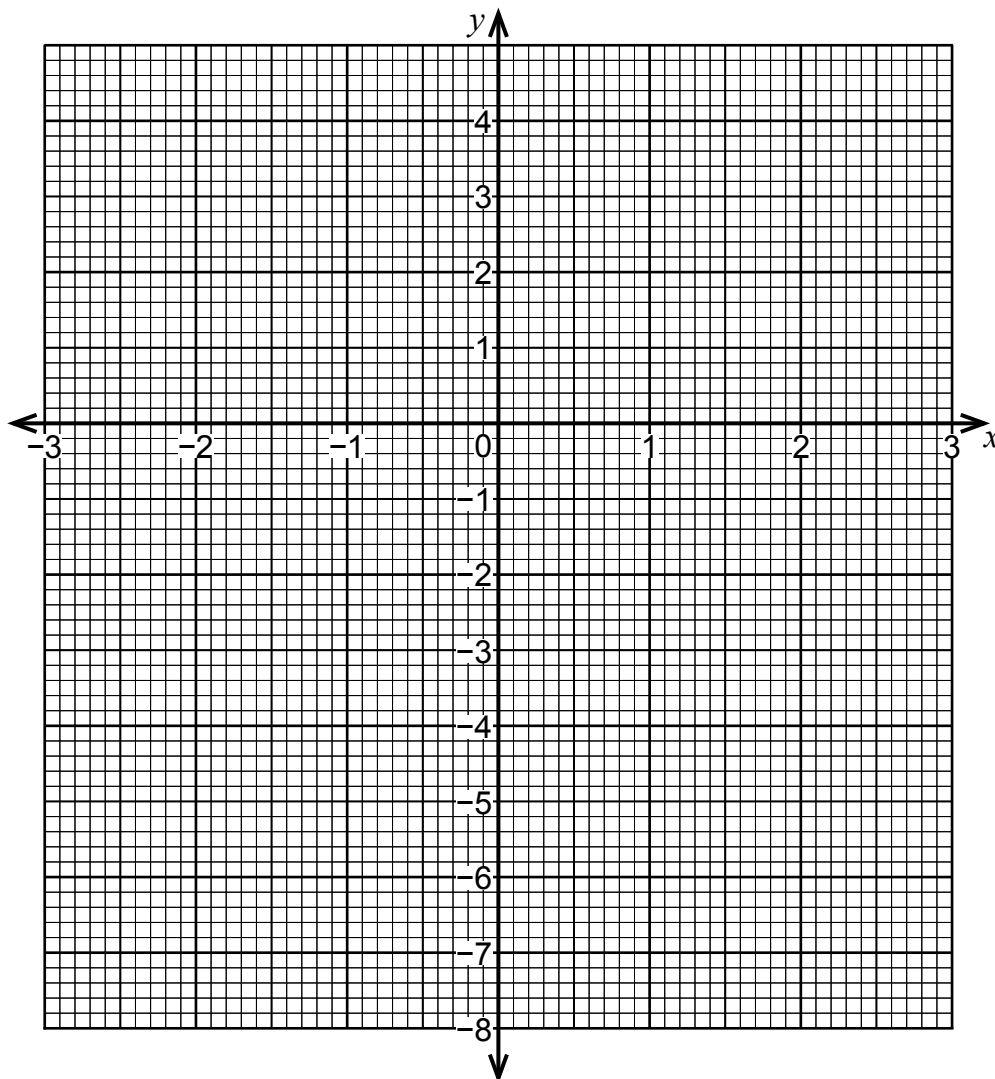
Answer (b) ..... cm<sup>2</sup> [4]

- 12 (a) Complete the table below for  $y = x^2 - 8$ .

$x$	-3	-2	-1	0	1	2	3
$y$	1		-7	-8	-7		

[3]

- (b) On the grid provided, draw the graph of  $y = x^2 - 8$  for  $-3 \leq x \leq 3$ .



- (c) (i) On the same grid, draw the line  $y = -2$ .

[4]

- (ii) Use your graphs to solve for  $x^2 - 8 = -2$ .

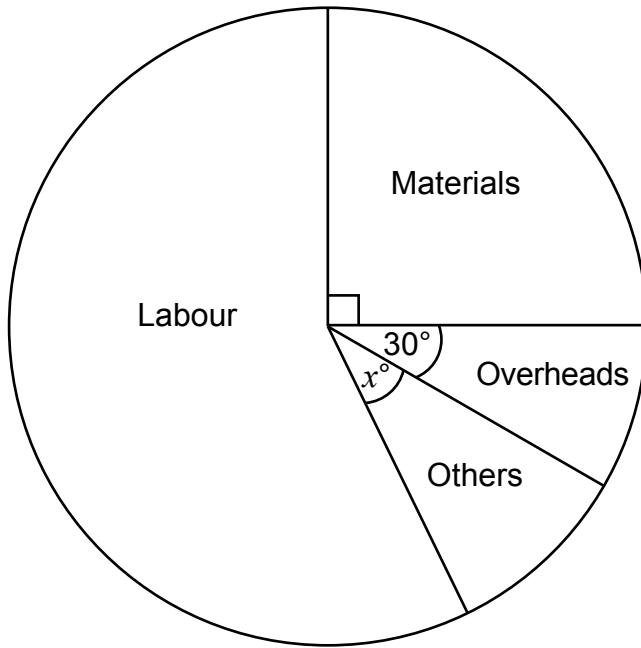
[1]

Answer (c)(ii)  $x = \dots\dots\dots$  or

$x = \dots\dots\dots$  [2]

13 The pie chart shows the costs involved in making a television set.

The total cost of making a television set is N\$ 1 800.00



NOT TO  
SCALE

(a) Calculate

(i) the value of angle  $x$  if the cost for others is N\$ 170,

Answer (a)(i)  $x = \dots\dots\dots^\circ$  [2]

(ii) the angle in degrees for the labour.

Answer (a)(ii)  $\dots\dots\dots^\circ$  [2]

(b) What fraction of the total cost is for materials?

Write your answer in its simplest form.

Answer (b)  $\dots\dots\dots$  [2]

(c) Calculate the cost for the overheads.

Answer (c) N\$  $\dots\dots\dots$  [2]

**14** A bag contains 4 blue balls, 3 green balls and 2 red balls. A ball is picked from the bag at random.

**(a)** Calculate the probability that the picked ball is

**(i)** green,

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

**(ii)** is not green.

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

**(b)** What is the probability that the picked ball is yellow?

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

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**15** The list below represents marks of 11 learners in a Mathematics test.

10, 15, 9, 7, 9, 3, 20, 6, 11, 17, 12

**(a)** Write down the modal mark of the test.

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

**(b)** What was the range of the marks?

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

**(c)** Write down the median mark for the test.

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