



REPUBLIC OF NAMIBIA

MINISTRY OF EDUCATION, ARTS AND CULTURE

NAMIBIA JUNIOR SECONDARY SPECIMEN PAPERS

MATHEMATICS JS LEVEL

SPECIMEN PAPERS 1 AND 2 (Grade 8 & 9)

MARK SCHEMES FOR PAPER 1 AND 2 (Grade 8 & 9)

GRADES 8 - 9

**THESE PAPERS AND MARK SCHEMES SERVE TO EXIMPLIFY THE SPECIFICATIONS IN
THE REVISED JS MATHEMATICS SYLLABUS**

2018

Ministry of Education, Arts and Culture
National Institute for Educational Development (NIED)
Private Bag 2034
Okahandja
Namibia

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JS Mathematics Specimen Papers' Booklet Grades 8 - 9
Printed by NIED
Website: <http://www.nied.edu.na>

Publication date: March 2018

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Mark Scheme Notes

Marks are of the following six types:

M – Method mark, awarded for a valid method applied to the problem.

- Method marks are not lost for numerical errors, algebraic slips or errors in units. However, it is not usually sufficient for a candidate just to indicate an intention of using some method or just to quote a formula; the formula or idea must be applied to the specific problem in hand, e.g. by substituting the relevant quantities into the formula.
- Correct application of a formula without the formula being quoted obviously earns the M mark and in some cases an M mark can be implied from a correct answer.
- M2 means that the candidate's method qualifies two marks.

A – Accuracy mark, awarded for a correct answer or intermediate step correctly obtained. Accuracy marks cannot be given unless the associated method mark is earned (or implied).

B – Mark for a correct result or statement independent of method marks.

c.a.o – correct answer only

F.T – follow through mark allowed for work correctly following on from previously incorrect results.

SC – a special case where a mark can be given for a specific wrong solution, or a case where some standard marking practice is to be varied in the light of a particular circumstance.

Candidate Name: _____

School: _____

Grade: _____

NAMIBIA JUNIOR SECONDARY EXAMINATION

MATHEMATICS

GRADE 8 PAPER 1 (Short Questions)

1 Hour 30 Minutes

Marks 45

2017

Additional Materials: Geometrical instruments
Tracing paper (optional)

ELECTRONIC CALCULATORS MUST NOT BE USED IN THIS PAPER

- Candidates answer on the Question Paper in the spaces provided.
- Write your Name, School and Grade 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 are not allowed to use a calculator for this paper.**
- Do not use correction fluid.
- Do not write in the margin *For Examiner's Use*.
- If the 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.

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<i>Marker</i>	
<i>Checker</i>	

This document consists of **8** printed pages and **1** blank page



Republic of Namibia

MINISTRY OF EDUCATION, ARTS AND CULTURE

1. Calculate $9 + 5 \times 2$. Answer: [1]

2. From the list of numbers 1, 6, 29, 42, write down:
(a) a prime number, Answer (a)..... [1]

(b) a square number which is also a cube number.
Answer (b)..... [1]

3. Write $\frac{25}{100}$ as a decimal. Answer: [1]

4. Write $\frac{6}{24}$ in its simplest form Answer: [1]

5. Round 33.495 to one decimal place. Answer: [1]

6. Simplify the ratio 3kg : 500g . Answer: [2]

7. Maria scored 12 out of 30 in a test. Work out her percentage. Answer: %[2]

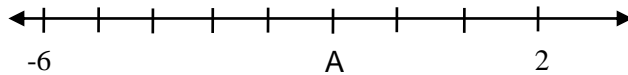
8. Use $>$, $<$ or $=$ to make each statement true.

(a) $\frac{3}{4}$ 0.25 [1]

(b) -7 $(-14+7)$ [1]

(c) $\sqrt{36}$ 3^2 [1]

9. Write down the value of A indicated on the number line.



Answer: [1]

10. Given the expression $3x^4 + 5x^3 - x^2 - 8x + 7$;

(a) determine the number of terms in the expression,

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

(b) write down the coefficient of x^2 .

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

11. Identify a constant in $5x + y + 6$.

Answer: [1]

12. Given that $x = -3$ and $y = 6$, find the value of xy .

Answer: [1]

13. Solve the equation $x + 5 = 14$.

Answer: [1]

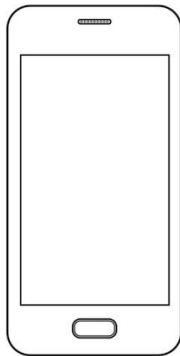
14. Simplify $7y - 3z + 2y - 4z$.

Answer: [2]

15. Multiply out $3(4x - 5y)$.

Answer: [2]

16. Tom buys a cellphone for N\$ 200.00 and sells it for N\$ 150.00.



(a) Did he make a profit or loss?

Answer (a) [1]

(b) Calculate the amount of profit or loss he make.

Answer (b) N\$ [1]

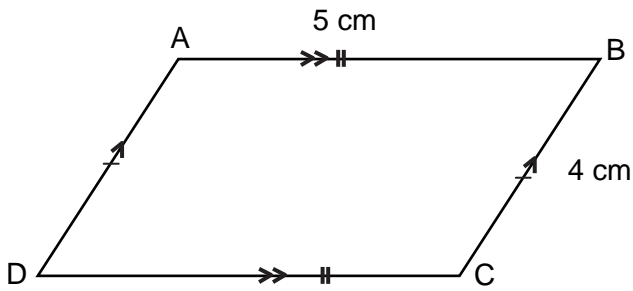
(c) Calculate the percentage profit or loss

Answer (c)% [2]

17. Samabi invests N\$ 10 000 at 5% simple interest per year.
Calculate the interest earned after 3 years.

Answer: [2]

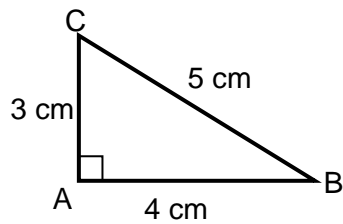
18. ABCD is a quadrilateral.



Calculate the perimeter of the shape

Answer: cm [2]

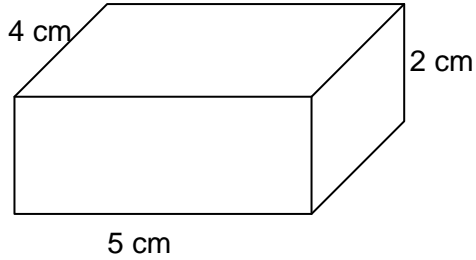
19. Calculate the area of the triangle.



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Answer: cm² [2]

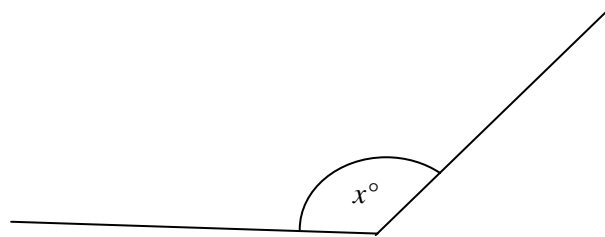
20. Calculate the volume of the cuboid.



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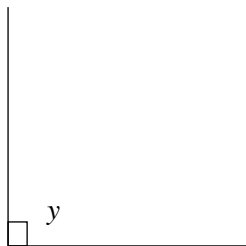
Answer: cm^3 [2]

21. Measure and write down the size of angle of x .



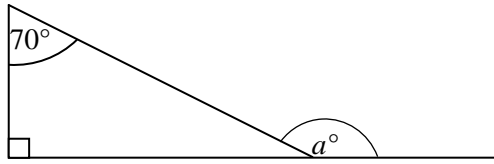
Answer: $x = \dots\dots\dots^\circ$ [1]

22. Write down the special name for angle y .



Answer: [1]

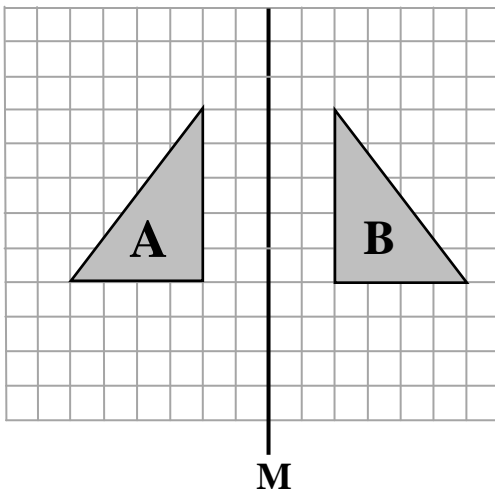
23. Calculate the value of angle a .



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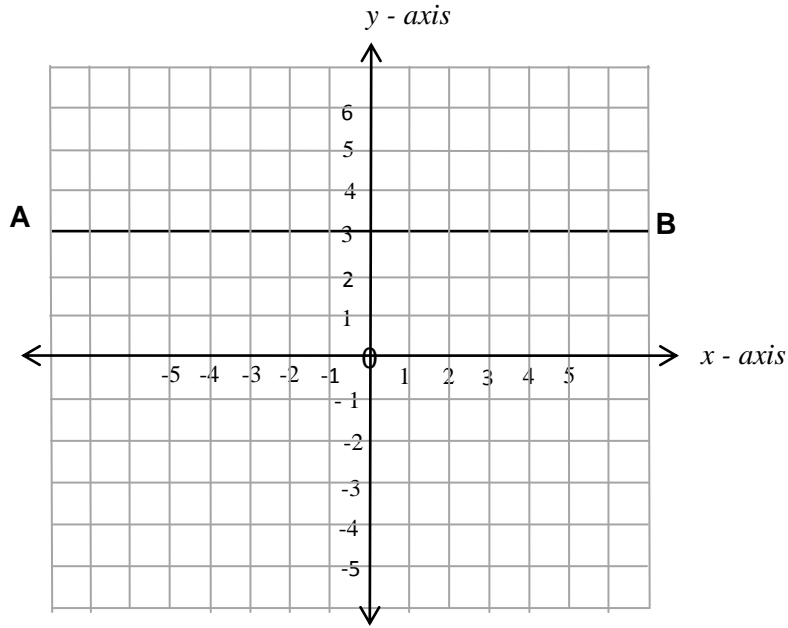
Answer: $a = \dots\dots\dots^\circ$ [2]

24. Describe fully the single transformation that map triangle A onto triangle B in the diagram.



.....
.....
..... [2]

25.



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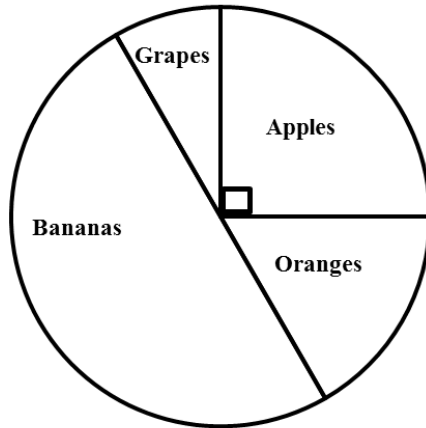
- (a) Plot point C with coordinates $(-2, 2)$ on grid above.
(b) Write down the equation of line AB

[1]

Answer: [1]

26. The pie chart shows the favourite fruits of learners in a class.

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a) Write down the least favorite fruit.

Answer (a) [1]

b) Write down the fraction of the pie chart representing apples.

Answer (b) [1]

NAMIBIA JUNIOR SECONDARY EXAMINATION

SPECIMEN PAPER 1

MARK SCHEME

MATHEMATICS

GRADE 8 PAPER1

GRADE 8 PAPER 1 MARK SCHEME

QUESTION	ANSWER	NARRATION	MARKS
1	19	cao	1
2	(a) 29	cao	1
	(b) 1	cao	1
3	0.25	cao	1
4	$\frac{1}{4}$	cao	1
5	33.5	cao	1
6	6:1	M1 for 3000:500 o.e.	2
7	40	M1 for $\frac{12}{30} \times 100$ or o.e.	2
8	(a) >	cao	1
	(b) =	cao	1
	(c) <	cao	1
9	-1	cao	1
10	(a) 5	cao	1
	(b) -1	cao	1
11	6	cao	1
12	-18	cao	1
13	9	cao	1
14	$9y - 7z$	B1 for $9y$ B1 for $-7z$	2
15	$12x - 15y$	B1 for $12x$, B1 for $-15y$	2
16	(a) loss	cao	1
	(b) 50	cao	1
	(c) 25	M1 $\frac{50}{200} \times 100$ or o.e.	2
17	1 500	M1 $\frac{10000 \times 5 \times 3}{100}$ or o.e	2
18	18	M1 $2(5) + 2(4)$ or o.e.	2
19	6	M1 $\frac{1}{2}(4 \times 3)$ or o.e.	2
20	40	M1 $4(5 \times 3)$ or o.e.	2
21	134 (± 1)	cao	1
22	Right angle	cao	1
23	160	M1 $180 - 20$ or $70 + 90$	2
24	Reflection Line M	B1 reflection B1 Line M	2
25	(a) Correct position	cao	1

	(b)	$y = 3$	cao	1
26	(a)	grapes	cao	1
	(b)	$\frac{90^\circ}{360^\circ}$ or o.e.	cao	1

TOTAL MARKS

45

Candidate Name: _____

School: _____

Grade: _____

NAMIBIA JUNIOR SECONDARY EXAMINATION

MATHEMATICS

GRADE 8 PAPER 2 (Structured Questions)

Marks 85

2 Hours

2017

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

- Candidates answer on the Question Paper in the spaces provided.
- Write your Name, School and Grade 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 for this paper.**
- Do not use correction fluid.
- Do not write in the margin *For Examiner's Use*.
- If the 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.

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MINISTRY OF EDUCATION, ARTS AND CULTURE

Grade 8 & 9 Specimen Papers, NIED, 2018

1. From the list of numbers, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, write down:

- (a) a factor of 40, Answer(a) [1]
- (b) a multiple of 11, Answer (b) [1]
- (c) a cube number, Answer (c)..... [1]
- (d) LCM of 6 and 8, Answer (d) [1]

2. Write the following number in ascending order (smallest first)

4.5, $\frac{5}{2}$, 3.142, $3\frac{1}{2}$

Answer < < < [2]

3. Find the highest common factor of 12 and 30

Answer (a) [1]

4. Write 225 as a product of its prime factors

Answer (b) [1]

5. Kevin and Katu are 20 and 24 years respectively.
Write down the ratio of their ages in its simplest form.

Answer: : [2]

6. Complete the table

Common fraction	Decimal fraction	Percentage
$\frac{1}{2}$	(i)	50%
(ii)	0.75	75%
$\frac{1}{4}$	0.25	(iii)

[3]

7. At the end of the month, the book shop sold 62% of 850 textbooks in stock.
Calculate the number of textbooks sold.

Answer (b) textbooks [2]

8. Calculate;
(a) 0.75×0.2

Answer (a) [1]

(b) $\frac{3}{4} - \frac{1}{2}$, show all your working

Answer (b) [2]

(c) $1\frac{2}{5} \times \frac{4}{7}$, show all your working

Answer (c) [2]

9. Convert the following;

(a) 2.5 ha to m^2

Answer (a) m^2 [1]

(b) 29 000 mm^3 to cm^3

Answer (b) cm^3 [1]

10. Bianca bought a dress costing N\$ 300.00 and later sold it for N\$ 450.00.

(a) Find the profit made by Bianca.

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

(b) Calculate the percentage of profit made by Bianca.

Answer (b)% [2]

11. Molatseng invested N\$ 5 000.00 at 8% simple interest per annum.
Calculate the interest he will get after 18 months.

Answer: N\$..... [3]

12. Mrs. Hausiku is buying a TV set costing N\$ 6 500.00. She is given a discount of 10%.

(a) Calculate the discount amount offered,

Answer (a) N\$ [2]

(b) How much will she pay for the TV set?

Answer (b) N\$ [1]

13. Abed records the midnight temperature in the table from Mondays to Friday.

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Days	Monday	Tuesday	Wednesday	Thursday	Friday
Temperature (°C)	4	-1	-3	2	6

(a) On which day was the lowest temperature recorded?

Answer (a) [1]

(b) On which day was the highest temperature recorded?

Answer (b) [1]

(c) Calculate the difference between the highest and lowest recorded temperature.

Answer (c) [2]

(d) Calculate the mean (average) midnight temperature for the week.

Answer (d) [2]

14. The expression $2y + 6$ is given.

- (a) Write down;
 - (i) the constant

 - (ii) the variable

Answer (i) [1]

Answer (ii) [1]

(b) Find the value of $2y + 6$ when $y = -5$.

Answer (b) [2]

15. Simplify the following expressions

(a) $3xy + 4x - xy + 10x$

Answer (a) [2]

(b) $8x(2xy - 3)$

Answer (b) [2]

16. Solve the equation $4x + 8 = 20$

Answer: $x =$ [2]

17. The cost of one pen is N\$ 2.00

(a) Calculate the total cost of 15 pens

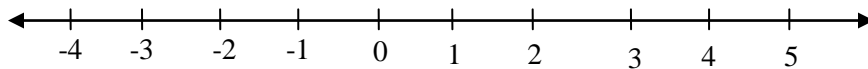
Answer (a) N\$ [1]

(b) Write down the formula for the total cost (C) for x pens.

Answer (b) $C = \dots\dots\dots$ [1]

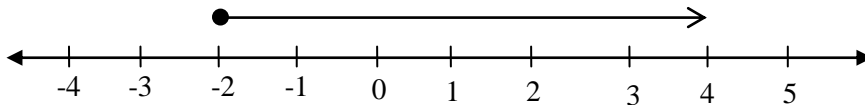
18. The two number lines are drawn.

(a) On the number line draw the inequality that represents $x < -1$



[1]

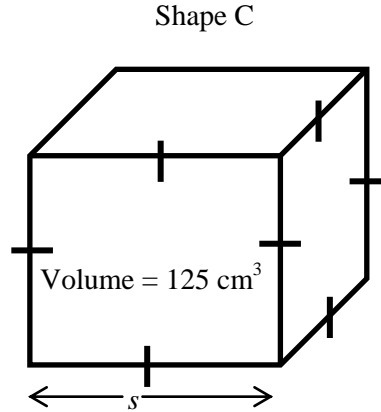
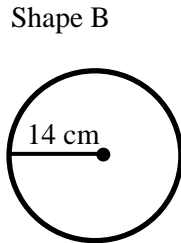
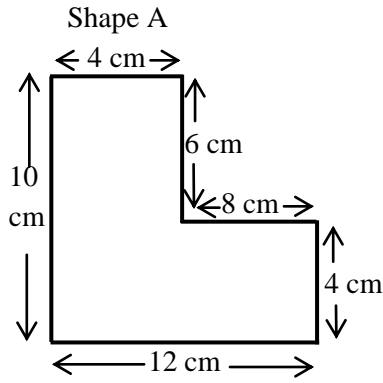
(b) Write down the inequality shown on the number line.



Answer (b) [1]

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19. The following three shapes are given.



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(a) Write down the diameter of shape B.

Answer (a)cm [1]

(b) Calculate;

(i) the perimeter of shape A,

Answer (b)(i)cm [2]

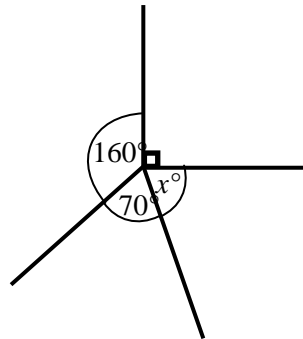
(ii) the area of shape B

Answer (b)(ii)cm² [2]

(iii) the value of s in shape C

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

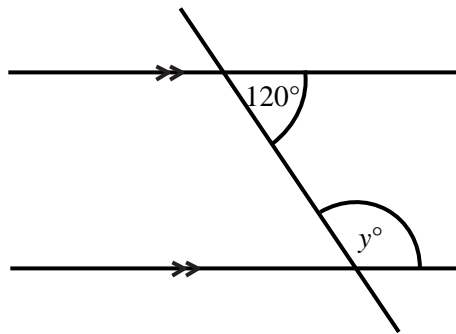
20. (a) Calculate the size of angle x .



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

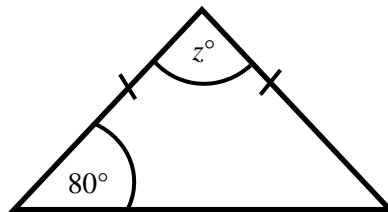
(b) Calculate the value of y .



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Answer (b) $y = \dots\dots\dots^\circ$ [2]

(c) Find the value of angle z .

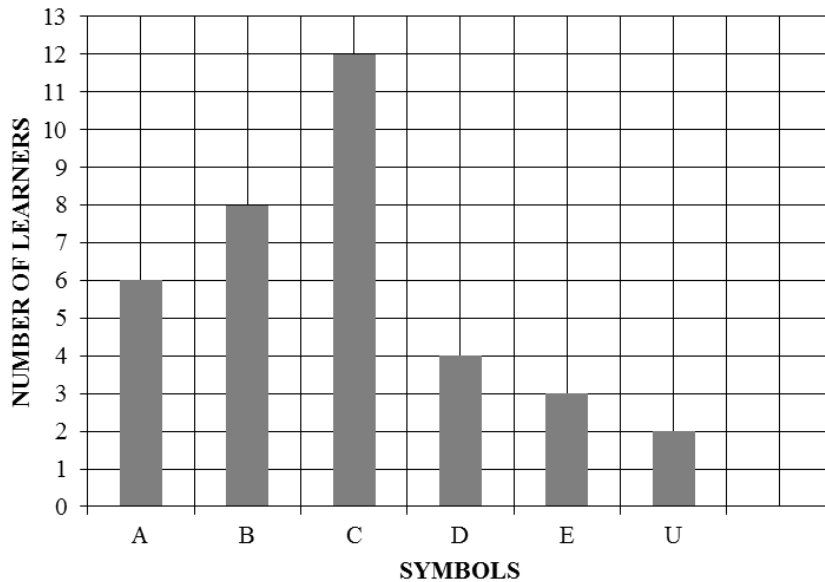


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Answer (c) $z = \dots\dots\dots^\circ$ [2]

21. The diagram shows a bar graph for symbols obtained by learners in a grade 8 class.

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Use*



(a) Determine the number of learners who scored symbol B.

Answer (a) learners [1]

(b) Which symbol was obtained by most of the learners?

Answer (b) [1]

(c) Calculate the total number of learners that wrote the test.

Answer (c)learners [2]

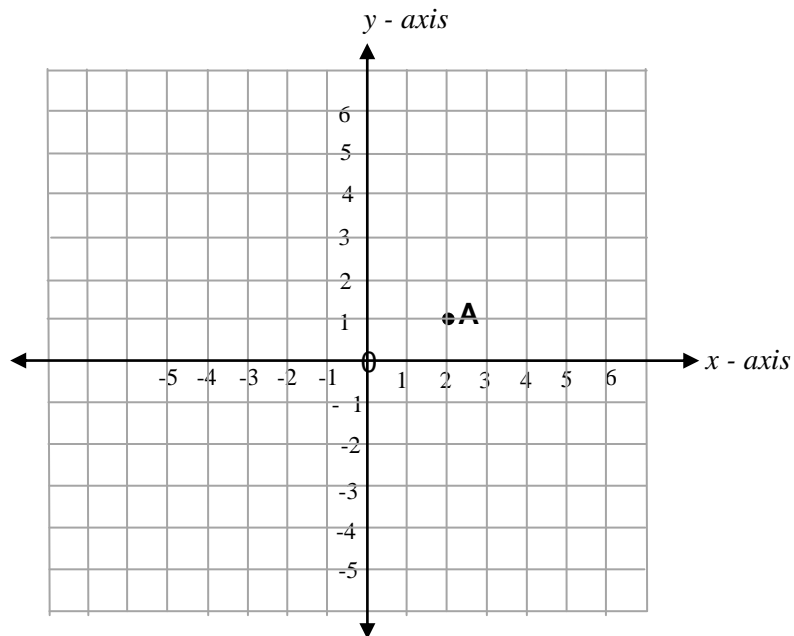
(d) For the learners to pass this test, he or she should obtain symbol A to D. Work out the number of learners who passed this test.

Answer (d)learners [2]

(e) Calculate the percentage of learners who scored A to D.

Answer (e)% [2]

22. The grid is shown with point A.



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(a) Write down the coordinates of point **A**.

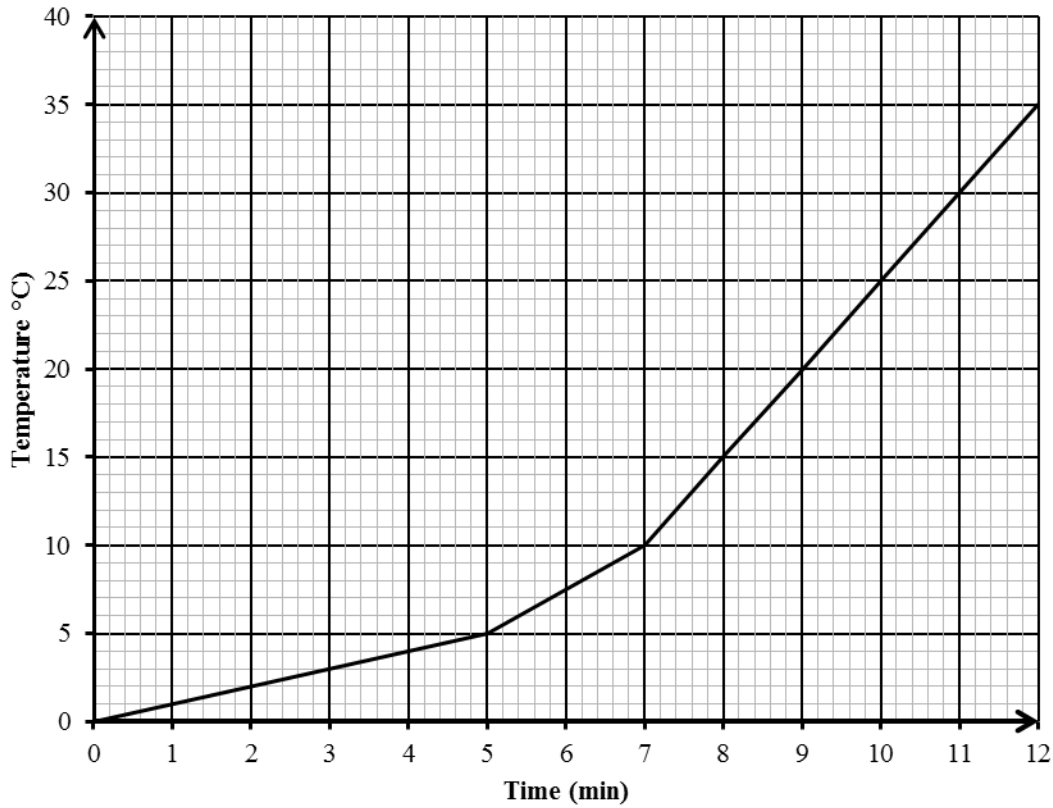
Answer (a) (..... ,) [2]

(b) Draw the line of $y = -2$ on the grid above.

[1]

23. The graph shows the temperature of water recorded at different time intervals.

*For
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(a) Find,

(i) the time when the temperature is 25 °C

Answer (a)(i) min [1]

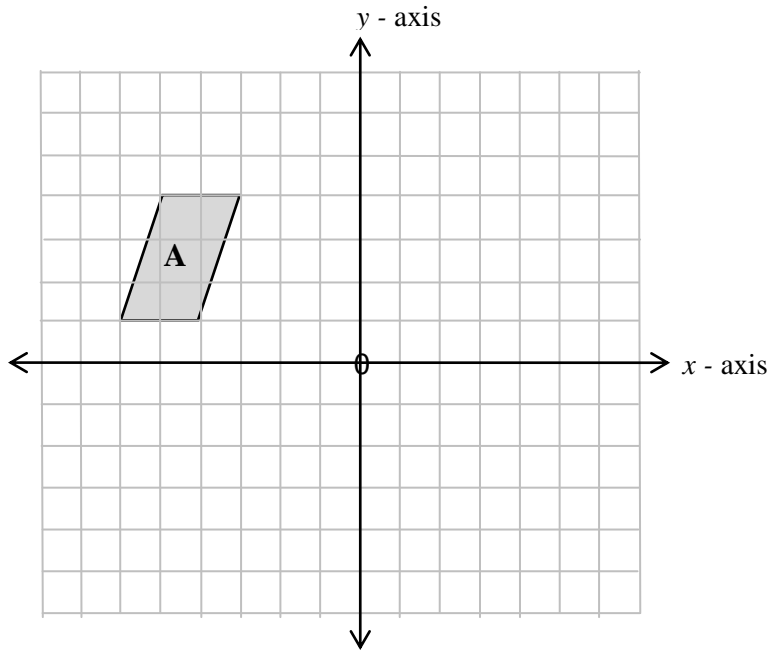
(ii) the temperature after 6 minutes

Answer (a)(ii) °C [1]

(b) Work out the difference in temperature between 7 and 2 minutes.

Answer (b) °C [2]

24. Reflect object A in the y - axis



[2]

25. Draw the line(s) of symmetry on figure B

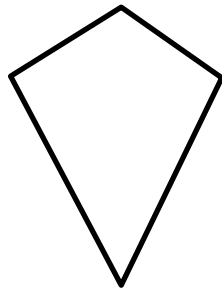
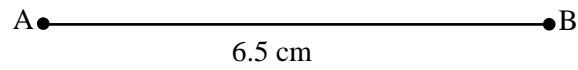


Figure B

[1]

26. Draw triangle ABC with $AB = 6.5$ cm, $BC = 5$ cm, $AC = 4$ cm. Line AB is drawn for you.

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Use*



[2]

NAMIBIA JUNIOR SECONDARY EXAMINATION

SPECIMEN PAPER 2

MARK SCHEME

MATHEMATICS

GRADE 8 PAPER 2

GRADE 8 PAPER 2 MARK SCHEME

MEMORANDUM FOR SPECIMEN PAPER 2 FOR GRADE 8 MATHEMATICS MARKS : 85			
Question	Answer	Narration	Marks
1. (a)	20	c.a.o	1
(b)	22	c.a.o	1
(c)	27	c.a.o	1
(d)	24	c.a.o	1
2.	$\frac{5}{2} < 3.142 < 3\frac{1}{2} < 4.5$	M1 for changing all numbers to decimal numbers correctly	2
3.	6	c.a.o	1
4.	$3 \times 3 \times 5 \times 5$ or $3^2 \times 5^2$	M1 for 3;3;5;5	2
5.	5 : 6	M1 for 20 : 24 or o.e	2
6. (a) (i)	0.5	c.a.o	1
(ii)	$\frac{3}{4}$	c.a.o	1
(iii)	25%	c.a.o	1
7.	527	M1 for $\frac{62}{100} \times 850$ or o.e	2
8. (a)	0.15 or $\frac{3}{20}$	c.a.o	1
(b)	$\frac{1}{4}$	M1 for $\frac{3}{4} - \frac{2}{4}$ or o.e	2
(c)	$\frac{4}{5}$ or $\frac{28}{35}$	M1 for $\frac{7}{5} \times \frac{4}{7}$	2
9. (a)	25 000	c.a.o	1
(b)	29	c.a.o	1
10. (a)	150	c.a.o	1
(b)	50%	M1 for $\frac{150}{300} \times 100$ or o.e	2
11.	5 600	M1 for $\frac{8}{100} \times 5000 \times \frac{18}{12}$ or o.e M2 for 600	3
12. (a)	650	M1 for $\frac{10}{100} \times 6500$ or o.e	2
(b)	5 850	c.a.o	1
13. (a)	Wednesday	c.a.o	1
(b)	Friday	c.a.o	1

(c)	± 9	M1 for $6 - (-3)$ or $-3 - 6$	2
(d)	1.6	M1 for $\frac{8}{5}$ or $\frac{\text{Expanded sum}}{5}$	2
14. (a)(i)	6	c.a.o	1
(ii)	y	c.a.o	1
(b)	-4	M1 for $2(-5) + 6$ or $-10 + 6$	2
15. (a)	$2xy + 14x$	B1 for $2xy$ or $14x$	2
(b)	$16x^2y - 24x$	B1 for $16x^3y$ or $-24x^2$	2
16.	3	M1 for $4x = 12$	2
17. (a)	30	c.a.o	1
(b)	$C = 2x$	c.a.o	1
18. (a)	Correct line with an open circle and a correct direction shown	c.a.o	1
(b)	$x \geq -2$	c.a.o	1
19. (a)	28	c.a.o	1
(b)(i)	44	M1 for $10 + 4 + 6 + 8 + 4 + 12$	2
(ii)	616	M1 for $\frac{22}{7} \times 14^2$ or o.e	2
(iii)	5	M1 for $\sqrt[3]{125}$	2
20. (a)	40°	M1 for $360 - (160 + 90 + 70)$ or o.e	2
(b)	60°	M1 for $180 - 120$	2
(c)	20°	M1 for $180 - 2(80)$ or o.e	2
21. (a)	8	c.a.o	1
(b)	C	c.a.o	1
(c)	35	M1 for $6 + 8 + 12 + 4 + 3 + 2$	2
(d)	30	M1 for $6 + 8 + 12 + 4$	2
(e)	85.7	M1 for $\frac{30}{35} \times 100$	2
22. (a)	(2,1)	B1 for (2, y) or (x,1) S.C 1 for (1,2)	2
(b)	A correct line drawn touching y-axis at -2	c.a.o	1

23. (a)(i)	10	c.a.o	1
(ii)	7.5	c.a.o	1
(b)	8	M1 for 10 – 2	2
24.	Correct reflection on the y -axis	S.C.1 for correct reflection on x -axis	2
25.	A correct vertical line of symmetry drawn	c.a.o	1
26.	Correct triangle drawn with arcs.	B1 for each correct line drawn	2
TOTAL MARKS			85

Candidate Name: _____

School: _____

Grade: _____

NAMIBIA JUNIOR SECONDARY SEMI-EXTERNAL EXAMINATION

MATHEMATICS

GRADE 9 PAPER 1 (Short Questions)

1 Hours 30 Min

Marks 45

2017

Additional Materials: Geometrical instruments
Tracing paper (optional)

ELECTRONIC CALCULATORS MUST NOT BE USED IN THIS PAPER

- Candidates answer on the Question Paper in the spaces provided.
- Write your Name, School and Grade 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 are not allowed to use a calculator for this paper.**
- Do not use correction fluid.
- Do not write in the margin *For Examiner's Use*.
- If the 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.

<i>For Examiner's Use</i>	
<i>Marker</i>	
<i>Checker</i>	

This document consists of **8** printed pages.



Republic of Namibia
MINISTRY OF EDUCATION, ARTS AND CULTURE

1. Evaluate

(a) 2^3 ,

Answer (a) [1]

(b) 3^{-2} ,

Answer (b) [1]

(c) 100^0 .

Answer (c) [1]

2. Mr. Dauseb wants to share 75 goats among his two sons Hans and Dave aged 10 and 15 years respectively.

(a) Write down Hans and Dave age's as a ratio in its simplest.

Answer (a) : [2]

(b) Calculate the number of goats Hans will get.

Answer (b) goats [2]

3. Selma bought N\$20.00 recharge voucher that includes 15% VAT. Calculate the amount of VAT on the price.

Answer N\$ [2]

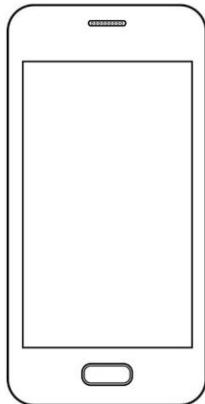
4. Given that U\$1 = N\$15. Covert U\$180.00 into Namibian dollars.

Answer N\$ [2]

5. Shihepo is a casual worker at a lodge and he is paid N\$12.00 per hour. Calculate the total amount he will get if he worked for 20 hours.

Answer N\$ [2]

6. Sarah bought a smartphone for N\$10 000, after two years she sold it for N\$8 000.
Calculate:



(a) the difference between the cost price and the selling price,

Answer (a) N\$ [1]

(b) the percentage decrease on cost price.

Answer (b)% [2]

7. (a) Simplify $\frac{10x^7y^6}{2x^3y^5}$.

Answer (a) [2]

(b) Expand and simplify $(2x-3)(3x+5)$.

Answer (b) [2]

(c) Solve the equation $2x+11=5x+2$.

Answer (c) x [2]

8. In a class, the ratio of boys to girls is 2 : 5. Find the number of girls when there is 14 boys in a class.

Answer [2]

9. The formula for the n^{th} term of a sequence is $6n - 3$.

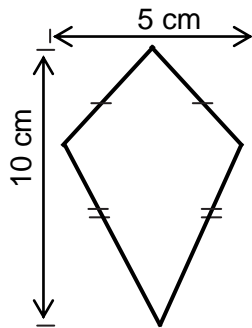
(a) Write down the first two terms.

Answer (a) [2]

(b) Which term is equal to 33.

Answer (b) [2]

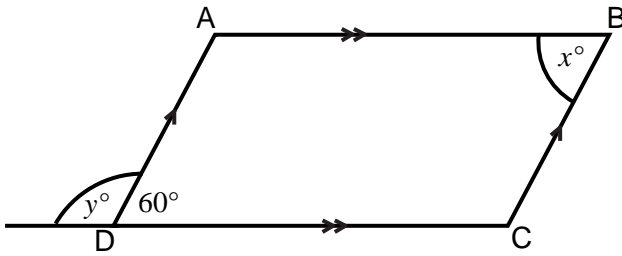
10. The diagram of a kite is given.



Calculate the area of the kite.

Answercm² [2]

11. The diagram shows a parallelogram ABCD.



Find the value of :

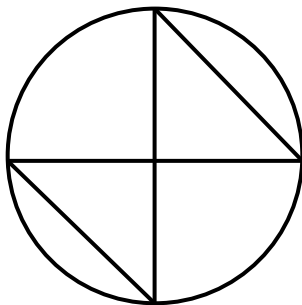
(a) x°

Answer: $x = \dots\dots\dots^\circ$ [1]

(b) y°

Answer: $y = \dots\dots\dots^\circ$ [1]

12. The diagram of a circle is drawn.

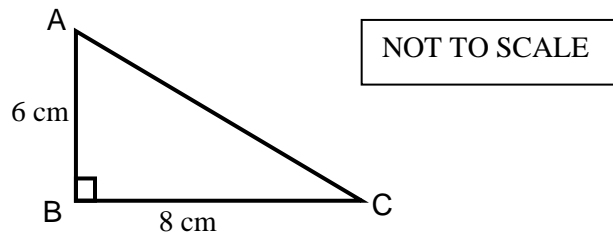


Write down the order of rotational symmetry.

Answer $\dots\dots\dots$ [1]

13. The ABC is a right-angled triangle.

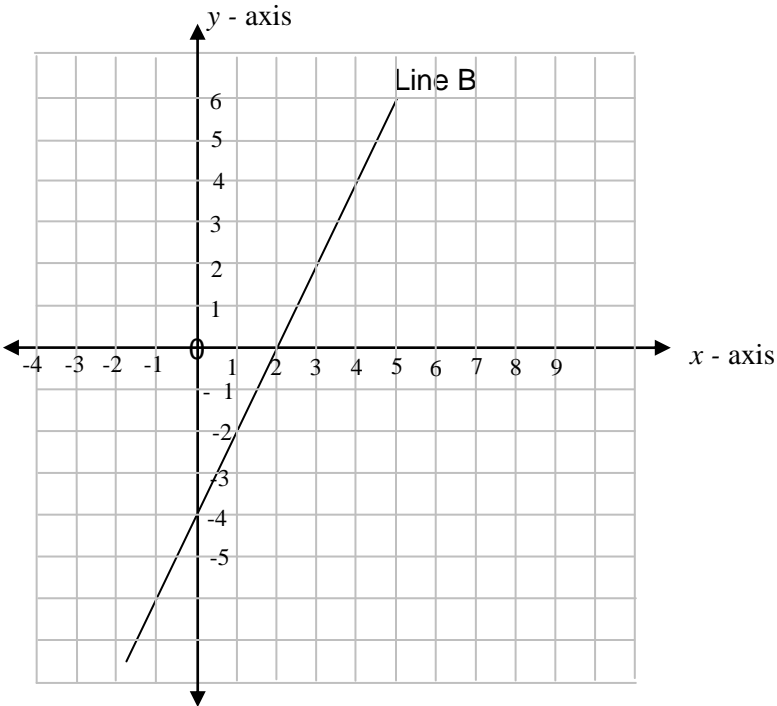
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Calculate the length of AC.

Answer cm [2]

14. The diagram shows a straight line graph.



a) Write down the y -intercept of line B .

Answer (a) [1]

b) Calculate the gradient of line B .

Answer (b) [2]

15. Jane chooses a letter at random from the word **OTAMANZI**. Find the probability that the letter that Jane chooses is:

a) an **A**,

Answer (a) [1]

b) a **K**.

Answer (b) [1]

16. Six grade 9 learners wrote a Mathematics test out of 20. Their test marks are:

18, 5, 10, 3, 2, 4

(a) Find

(i) the range,

Answer (a)(i) [1]

(ii) the median.

Answer (a)(ii) [2]

(b) Calculate the mean mark.

Answer (b) [2]

NAMIBIA JUNIOR SECONDARY SEMI – EXTERNAL EXAMINATION

SPECIMEN PAPER 1

MARK SCHEME

MATHEMATICS

GRADE 9 PAPER 1

GRADE 9 PAPER 1 MARK SCHEME

Question	Answer	Narration	Marks
1. a)	8	cao	1
b)	$\frac{1}{9}$	cao	1
c)	1	cao	1
2. a)	2 : 3	B1 for only one number correct	2
b)	30 goats	M1 for $\frac{2}{5} \times 75$ or $\frac{150}{5}$ or 2×15	2
3.	N\$ 3. 00	M1 for $\frac{15}{100} \times 20$ or $\frac{15}{10} \times 2$ or $\frac{300}{100}$ or 0.15×20	2
4.	N\$ 2700. 00	M1 for 15×180 seen	2
5.	N\$ 240. 00	M1 for 12×20	2
6. a)	N\$ 2000. 00	c.a.o	1
b)	20%	M1 for $\frac{2000}{10000} \times 100$ or $\frac{2}{10} \times 100$ or $\frac{2000}{100}$ or $\frac{200000}{10000}$	2
7. a)	$5x^4y$	B1 for 5 or x^4y seen	2
b)	$6x^2 + x - 15$	B1 for $6x^2 + 10x - 9x - 15$ seen	2
c)	$x = 3$	B1 for $-3x = -9$	2
8.	35 girls	B1 for $2x = 98$ or 49 seen	2
9. a)	3 and 9	B1 for 3 or 9 seen	2
b)	$n = 6$	M1 for $6n = 36$	2
10.	25 cm^2	M1 for $\frac{1}{2} \times 50$ or 2.5×10 seen	2
11. a)	$x = 60^\circ$	c.a.o	1
b)	$y = 120^\circ$	c.a.o	1
12.	2 order of rotational symmetry	c.a.o	1
13.	10 cm	M1 for $\sqrt{36 + 64}$ or $\sqrt{100}$ seen	2

14. a)	- 4	c.a.o	1
b)	2	M1 for any correct change in $y \div$ any correct change in x .	2
15. a)	$\frac{1}{4}$	c.a.o	1
b)	0	c.a.o	1
16. a) (i)	16	c.a.o	1
(ii)	4.5	M1 for $\frac{4+5}{2}$ seen	2
b)	7	M1 for $\frac{2+3+4+5+10+18}{6}$ or $\frac{42}{6}$ seen	2

TOTAL MARKS

45

Candidate Name: _____

School: _____ Grade: _____

NAMIBIA JUNIOR SECONDARY SEMI-EXTERNAL EXAMINATION

MATHEMATICS

GRADE 9 PAPER 2 (Structured Questions)

2 Hours

Marks 85

2017

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

- Candidates answer on the Question Paper in the spaces provided.
- Write your Name, School and Grade 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 for this paper.**
- Do not use correction fluid.
- Do not write in the margin *For Examiner's Use*.
- If the 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.

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<i>Checker</i>	

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Republic of Namibia
MINISTRY OF EDUCATION, ARTS AND CULTURE

1. Work out

(a) $\sqrt{25} + \sqrt[3]{216} \times 5^3$,

Answer (a) [2]

(b) $2(3a^3)^2$.

Answer (b) [2]

2. Evaluate $(16x^4)^{\frac{1}{2}}$

Answer [2]

3. John has 40 sweets. He gives 15% of the sweets to a friend.

(a) Calculate the number of sweets John gives to his friend.

Answer (a) sweets [2]

(b) Find the number of sweets John have now.

Answer (b) sweets [1]

4. (a) Round 345.367 to:

(i) one decimal place,

Answer (a)(i) [1]

(ii) two significant figures.

Answer (a)(ii) [1]

(b) Round off each number in the given calculation to the nearest whole number.

(i) $74.7 \div 4.5 + 9.7$

Answer (b)(i) \div + [1]

(ii) Use your answer in part **b)(i)** to estimate the answer to the given calculation.

Answer (b)(ii) [1]

5. The first four terms of a sequence are 2, 6, 10, 14, ...

(a) Write down the next term in the sequence.

Answer (a) [1]

(b) Find the n^{th} term of the sequence.

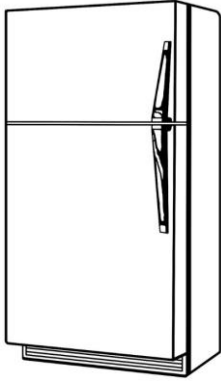
Answer (b) [2]

(c) Use the n^{th} term to find the 16th term.

Answer (c) [2]

6. The cash price of a refrigerator is N\$8 500. The refrigerator can also be bought on a hire purchase by paying a deposit of 10% of the cash price and a monthly installment of N\$450 per month for 24 months.

Mrs Jonas decides to buy the refrigerator on hire purchase.



- (a) Calculate the deposit she has to pay.

Answer (a) N\$ [2]

- (b) Calculate the hire purchase price of the refrigerator.

Answer (b) N\$ [2]

- (c) Find the difference between the cash price and hire purchase price.

Answer (c) N\$ [1]

7. Ms January invests N\$10 000 at 8% compound interest per annum.
Ms January invests her money for 3 years.

Calculate the compound interest after 3 years.

Answer N\$ [3]

8. Expand and simplify the following expressions
(a) $(x-6)^2$,

Answer (a) [2]

(b) $(a+2)(3a-2b+1)$.

Answer (b) [2]

9. Factorise completely:
(a) $4a^2 - 16a + 2a^3$

Answer (a) [2]

(b) $2ax + 3by + 3ay + 2bx$

Answer (b) [2]

10. Find the value of $2a^2 + 3ab - 5c$ when $a = -2$, $b = 3$ and $c = 1$.

Answer [2]

11. Kahiri is x years old, his sister is 6 years younger than him, and his father is twice as old as Kahiri.

(a) Write down the father's age in terms of x .

Answer (a) [1]

(b) The total of their ages is 82 years. Write down the equation in terms of x .

Answer (b) [1]

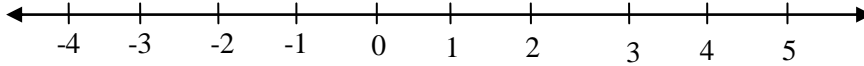
(c) Work out Kahiri's age by solving the equation in **part (b)**.

Answer (c) [2]

12. (a) Solve the inequality $4x \leq 2x + 8$

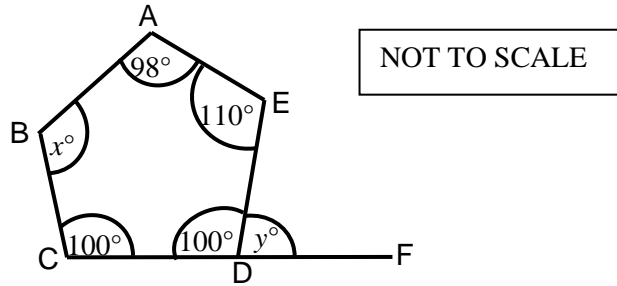
Answer (a) [2]

b) Represent your answer in **part (a)** on the number line.



[2]

13.



(a) Name polygon ABCDE.

Answer (a) [1]

(b) Calculate the sum of the interior angles of this polygon.

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

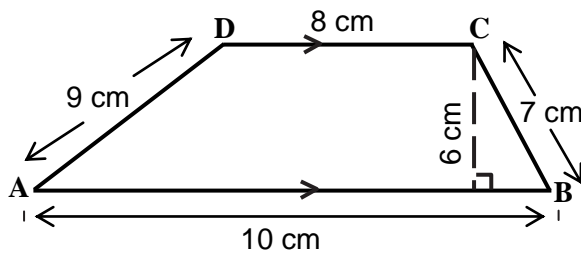
(c) Calculate
(i) angle x° ,

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

(ii) angle y° .

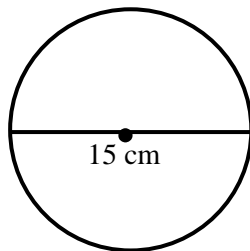
Answer (c)(ii) $y =$ $^\circ$ [2]

14. (a) Calculate the perimeter of the trapezium.



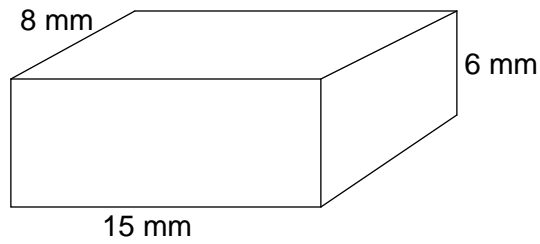
Answer (a) cm [2]

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



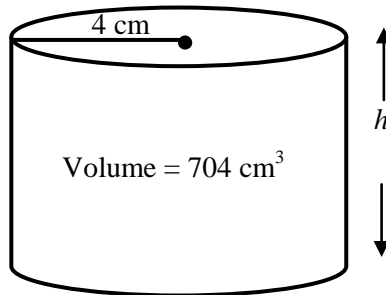
Answer (b) cm² [2]

c) Calculate the surface area of the cuboid.



Answer (c)mm² [2]

(d) The diagram shows a cylinder with a radius of 4 cm and the volume of 704 cm³.



Calculate the height (h) of the cylinder.

Answer (d) $h =$ cm [3]

15. A box contains 40 pencils. 12 are red, 24 are black and the rest are blue.

(a) How many blue pencils are in the box?

Answer (a) [1]

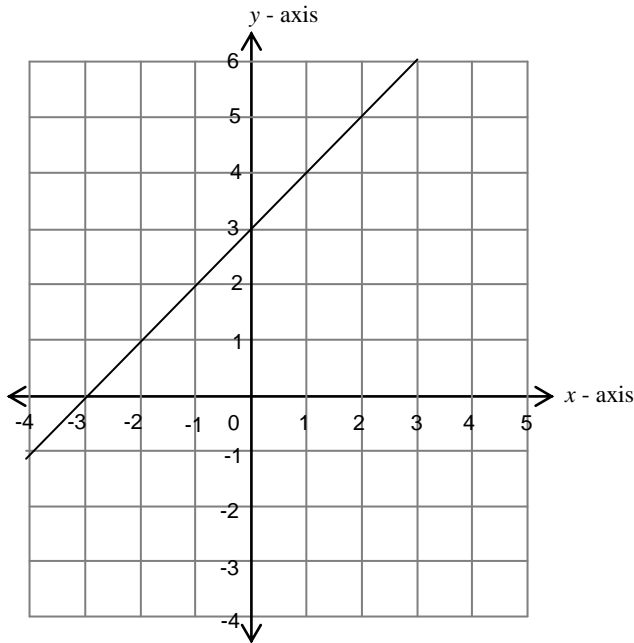
(b) What is the probability of choosing a blue pencil at random?

Answer (b) [2]

(c) What is the probability of choosing a green pencil from the box?

Answer (c) [1]

16. The diagram shows the graph of line AB .



(a) (i) Write down the y – intercept of line AB .

Answer (a) (i) [1]

(ii) Calculate the gradient of line AB .

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

(iii) Find the equation of line AB .

Answer (a)(iii) $y =$ [1]

(b) (i) Complete the table of values for $y = 2x + 2$.

x	-3	-2	-1	0	1	2
y	-4		0	2		6

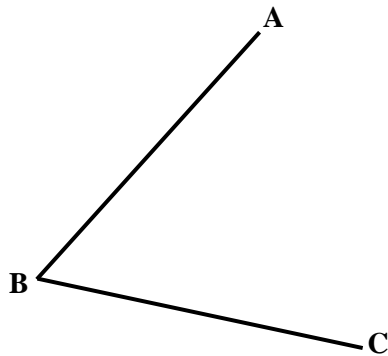
[2]

(ii) On the same grid plot all the points of the table in part (b) (i) to draw the graph of $y = 2x + 2$.

[2]

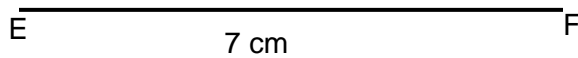
17. Using a pair of compasses and straight edge.

(a) Bisect angle ABC .



[2]

(b) Construct triangle DEF . $DE = 6$ cm, $EF = 8$ cm and $DF = 5$ cm (EF is given as 7 cm).

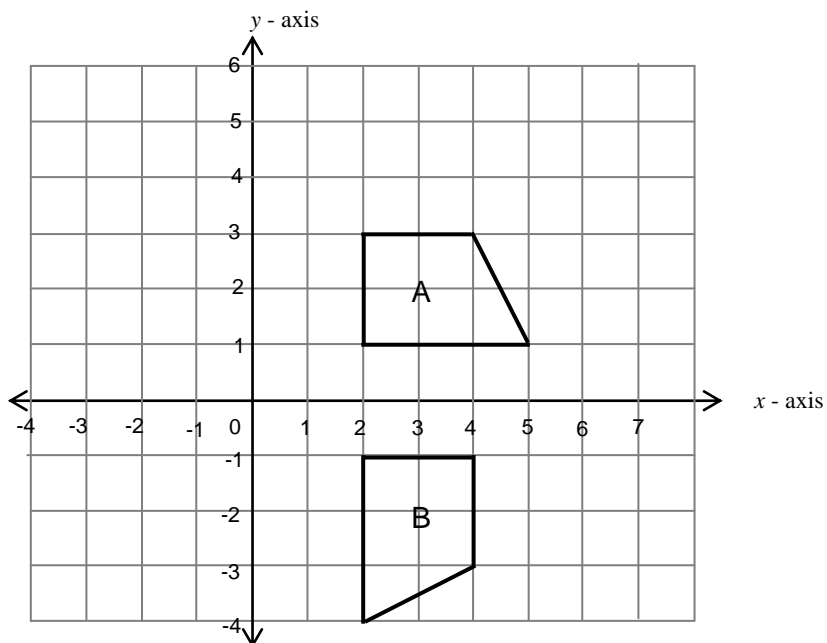


[2]

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Use*

18. The diagram shows trapezium *A* and *B*.

*For
Examiner's
Use*



(a) Describe fully a single transformation that maps trapezium *A* onto trapezium *B*.

Answer

.....

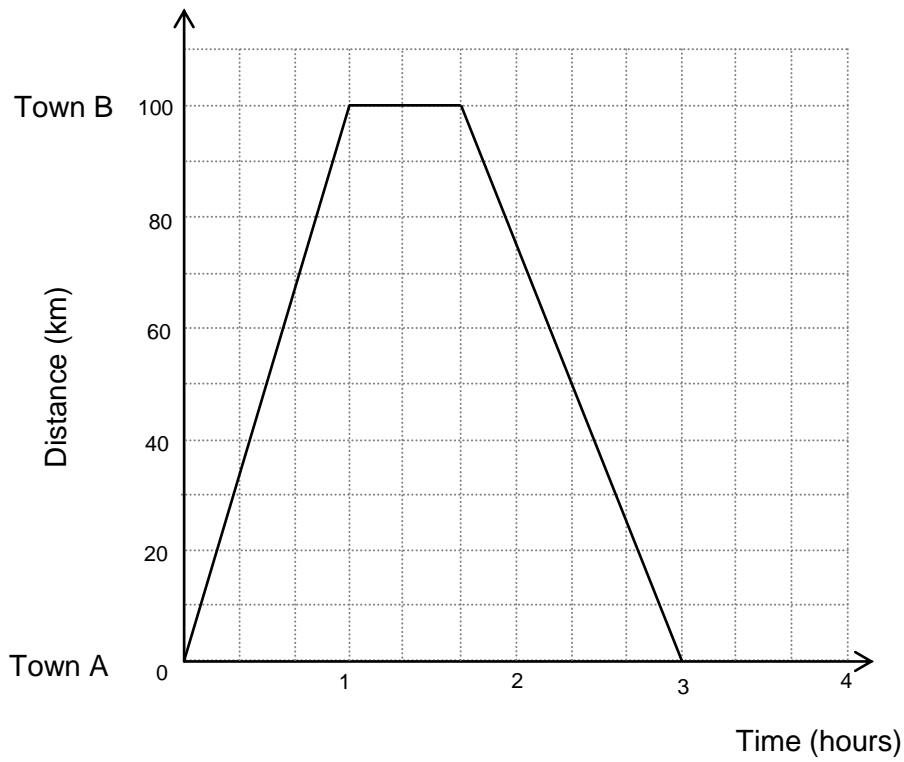
[3]

19. On the grid, draw the enlargement of trapezium *A* with scale factor 2 about (0,0).

[2]

20. The graph shows a return journey by train from Town A to Town B.

*For
Examiner's
Use*



(a) How far is town A from town B?

Answer (a) [1]

(b) Calculate the average speed for the train

Answer (b) [2]

(c) How long did the train stay at town B?

Answer (c) [1]

NAMIBIA JUNIOR SECONDARY SEMI – EXTERNAL EXAMINATION

SPECIMEN PAPER 2

MARK SCHEME

MATHEMATICS

GRADE 9 PAPER 2

GRADE 9 PAPER 2 MARK SCHEME

Question	Sub-question	Answer	Narration	Marks
1.	(a)	755	M1 for $5 + 6 \times 125$	2
	(b)	$18a^6$	B1 for 18 or a^6 or M1 for $2(9a^6)$	2
2.		$4x^2$	B1 for 4 or x^2	2
3.	(a)	6	M1 for $\frac{15}{100} \times 40$ or o.e	2
	(b)	34	c.a.o	1
4.	(a) (i)	345.4	c.a.o	1
	(ii)	350	c.a.o	1
	(b) (i)	$75 \div 5 + 10$	c.a.o	1
	(ii)	25	Accept ft.	1
5.	(a)	18	c.a.o	1
	(b)	$4n - 2$ or $2 + 4(n - 1)$ or $2 + 4n - 4$	B1 for $4n$ or -2	2
	(c)	398	M1 for $4(100) - 2$ or $2 + 4(100 - 2)$	2
6.	(a)	850	M1 for $\frac{10}{100} \times 8500$	2
	(b)	11 650	M1 for $850 + 450 \times 24$	2
	(c)	3150	c.a.o	1
7.		2 597.12	M1 for $10000 \left(\frac{8}{100} + 1 \right)^2$ M2 for 12 597.12	3
8.	(a)	$x^2 - 12x + 36$	M1 for $x^2 - 6x - 6x + 36$	2
	(b)	$3a^2 + 7a - 2ab - 4b + 2$	M1 for $3a^2 - 2ab + a + 6a - 4b + 2$	2
9.	(a)	$2a(2a - 8 + a^2)$	B1 for $2a$ or $2a - 8 + a^2$	2
	(b)	$(a + b)(2x + 3y)$	M1 for $a(2x + 3y) + b(3y + 2x)$	2
10.		-15	M1 for $2(-2)^2 + 3(-2)(3) - 5(1)$ or $8 - 18 - 5$	2
11.	(a)	$2x$	c.a.o	1
	(b)	$x + x - 6 + 2x = 82$ or	c.a.o	1

		$4x - 6 = 82$		
	(c)	19	M1 for $4x = 76$	2
12.	(a)	$x \leq 4$	M1 for $2x \leq 8$	2
	(b)	A correct line drawn with a correct direction	B1 for open circle or correct direction shown	2
13.	(a)	Pentagon	c.a.o	1
	(b)	540°	M1 for $(5-2)180$ or o.e	2
	(c) (i)	130°	M1 for $540 - (110 + 300)$	2
	(ii)	80°	M1 for $180 - 100$	2
14.	(a)	34	M1 for $10 + 8 + 9 + 7$	2
	(b)	707.1	M1 for $\frac{22}{7} \times 15^2$ or o.e	2
	(c)	720	M1 for $6 \times 8 \times 15$	2
	(d)	14	M1 for $\frac{22}{7} \times 4^2 \times h = 704$ M2 for $50.28h = 704$	2
15.	(a)	4	c.a.o	1
	(b)	$\frac{1}{10}$	M1 for $\frac{4}{40}$	2
	(c)	0	c.a.o	1
16.	(a) (i)	3	c.a.o	1
	(ii)	1	M1 for $\frac{3}{3}$ or o.e	2
	(iii)	$y = x + 3$	c.a.o	1
	(b) (i)	-2, 4	B1 for -2 or 4	2
	(ii)	A correct line drawn with all points	P1 for all points plotted L1 for the line	2
17.	(a)	Correct bisect line with arcs	B1 for correct arcs or correct line	2
	(b)	A triangle drawn correctly with arcs	B1 for correct line with arcs	2
18.	(a)	Rotation, 90 clockwise or -90 or 270 anticlockwise or +270, about (0,0)	B1 for Rotation or 90 clockwise or 270 anticlockwise or (0,0)	3

	(b)	Correct enlargement with vertices (2,2) (6,2) (2,4) (4.5,4)	B1 for correct scale factor used with wrong centre of enlargement	2
19.	(a) (i)	100	c.a.o	1
	(ii)	66.7	M1 for $\frac{100}{1.5}$	2
	(b)	From Town A to Town B	c.a.o	1

TOTAL MARKS

85



The National Institute for Educational Development

P/Bag 2034

Okahandja

NAMIBIA

Telephone: +64 62 509000

Facsimile: + 64 62 509073

E-mail: info@nied.edu.na

Website: <http://www.nied.edu.na>

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