



*Let the mind manage the bod
Que l'esprit gère le corps*

**MAURITIUS
EXAMINATIONS
SYNDICATE**

NCE 2024

Mathematics

Subject code: N510

EXAMINERS' REPORT

April 2025

Key messages

In order to do well in this paper, candidates need to

- demonstrate a good understanding across the whole syllabus
- be competent in basic numeracy skills
- recall necessary formulae and facts
- write digits clearly and distinctly
- show all their workings clearly in the space provided for each question
- give answers in the required form stated in the questions

GENERAL COMMENTS

Candidates performed less well in the NCE Mathematics Assessment 2024 than in the previous year. The overall percentage pass decreased from 79.8% in 2023 to 72.7% in 2024.

In general, candidates demonstrated knowledge and understanding of basic concepts in numbers, measurements, geometry and algebra. The first 15 questions in the question paper were well answered by a large number of candidates. However, questions requiring candidates to model algebraic problems and to make meaningful connections among various concepts proved challenging for many.

Some scripts were well presented although there were cases where candidates left the answer spaces blank. There was no evidence suggesting that the amount of time allotted was insufficient. Unanswered questions or incomplete work appeared to have resulted from candidates not knowing how to answer the questions rather than from a lack of time.

It is important to highlight the need for candidates to clearly show all their workings in a neat and legible manner. Omission of key steps, doing part calculations mentally and/or presenting illegible work can lead to loss marks. Students should be informed that marks are not necessarily awarded in the absence of evidence that supports their given answers.

Transcription errors were quite common as well. This suggests that candidates do not check the answers they write on the answer lines systematically. In addition, some candidates showed inadequate number sense. Consequently, implausible solutions to given problems often went unnoticed (e.g., number of students playing volleyball being a negative value in Qu. 17).

Candidates found that questions 22(a), 25, 26(b), 31 and 33 were challenging. It suggests that students' understanding of algebra, line graphs, inverse proportion, geometrical constructions, simultaneous equations and problem-solving skills require further reinforcement in class.

SPECIFIC COMMENTS

Question 1

Candidates correctly added the two given 3-digit numbers.

Question 2

Candidates did not have difficulties adding fractions with same denominator.

Question 3

This question was well answered by most candidates. A common wrong answer seen was 5000 kg 620g.

Question 4

The majority of candidates answered this question correctly. Some, however, gave the following incorrect answers:

- 8,
- $4 \times 4 \times 4$, 4^3 .

Question 5

The majority of the candidates recognised and applied the power law successfully. In some rare cases, candidates added the powers instead of multiplying them and obtained m^8 as answer.

Question 6

This question was well answered in general. However, some candidates circled more than one number from the list.

Question 7

Candidates performed well in this question. Nevertheless, the incorrect answer $9x^4$ was commonly seen.

Question 8

This question was accessible to the majority of candidates. The most popular wrong answer seen was 1.

Question 9

A large number of candidates answered this question correctly. A few expressed 0.31 as a fraction instead of as a percentage.

Question 10

This question was well answered by most candidates.

Question 11

Some candidates could not factorise $3x - 6$. They gave $3(x - 3)$ or $x - 2$ as answers. A few also equated the expression to 0 and went on to solve the equation they obtained.

Question 12

Qu. 12 consisted of 6 multiple choice questions. They assessed candidates' knowledge and comprehension of basic concepts mainly.

Part	Key	% of correct answers	Most common distractor
(a)	C	91.1	A
(b)	D	66.5	B/C
(c)	B	71.1	C
(d)	C	80.6	D
(e)	A	81.7	D
(f)	B	72.7	A

Part (a)

The majority of candidates identified the number of right angles in a rectangle.

Part (b)

A considerable number of candidates answered this item correctly. Option **C** was a common distractor among those who did not find the correct answer.

Part (c)

This part was correctly answered by most candidates, with a few who chose option **C** instead of option **B**.

Part (d)

This part was well answered by most candidates. The common distractor in this case was option **D**.

Part (e)

A good number of correct responses was noted for this item.

Part (f)

A large number of candidates answered this item successfully. Among the incorrect answers given, option **A** was the most popular.

Question 13

There was a very good response to this question on number line.

Question 14

Performance in this question was satisfactory.

Part (a)

This question was generally well answered by many candidates. However, it was quite common to see the given numbers arranged in descending order rather than in ascending order.

Part (b)

This part question proved difficult to a good number of candidates who did not identify Rs. 27 900 as representing 90% of the original price. They often calculated 10% of Rs 27 900 and added the result to Rs 27 900.

Question 15

Part (a)

Part (a) was straight-forward for a large number of candidates. The common wrong answers seen in part (a) were 12 or -12.

Part (b)

About 2 out of 5 candidates could solve the quadratic equation in part (b). Common mistakes included:

- choosing the wrong pair of numbers
- ignoring the signs of the middle and constant terms
- neglecting to check solutions obtained

Question 16

Part (a)

Candidates fared well in this question. They clearly knew the procedure to solve the inequality. Nevertheless, numerical and algebraic mistakes were frequently noted.

Common incorrect answers included:

- $x < 4$
- $x \geq 4$
- $x \leq 7$, resulting from wrong transfer of the constant term '3' onto the right hand side.

A few candidates replaced ' \leq ' sign by the '=' sign and went on to solve the equation which they had obtained.

Some wrote 4 on the answer line, although the inequality was correctly solved in the working space.

Part (b)

Many candidates drew the number line corresponding to their answers which they obtained in part (a) successfully and were awarded the mark.

Question 17

Almost half of the candidates were able to find the number of students who played football and volleyball by either using a Venn diagram or by other appropriate methods.

Part (a)

Many showed a lack of confidence to tackle the problem despite the fact that they were exposed to similar questions found in the textbook.

For candidates who used a Venn diagram, a partial mark was often scored for writing x (play both football and volleyball) and 6 (play neither football nor volleyball) in the appropriate region.

Some candidates formulated a correct equation in x which they solved successfully. Others had difficulties to either formulate the equation or, having found the correct equation, left arithmetical errors when solving it.

Part (b)

Performance in part (b) was better than in part (a). Candidates were awarded marks for subtracting 17 from their answer obtained in part (a).

A good number of candidates overlooked 'only' in the question and gave 17 as answer, which was already given in the question.

Question 18

About 50% of the candidates obtained the correct answer to this question.

A frequent wrong answer was 707.1 that resulted from 7.071×100 .

Question 19

Performance in this question was below expectation. About 3 out of 5 candidates recognised the correct position of the brackets.

Question 20

A good number of candidates evaluated the value of the unknown angle correctly. Common incorrect values recorded were 70° and 250° which resulted from $180^\circ - 110^\circ$ and $360^\circ - 110^\circ$ respectively.

Question 21

Performance in this question was quite good.

Part (a)

The majority of candidates were able to find the total distance covered by Kylie. However, some candidates converted kilometres into metres by multiplying $1\frac{3}{4}$ km by 100 instead of 1000. In a few other cases, candidates divided 2250 cm by 10 instead of 100 to convert centimetres into metres. Apart from incorrect conversion of units, some incorrect answers resulted from incorrect addition of 1750, 3500 and 22.5.

Part (b)

Candidates recalled and applied the formula to calculate simple interest successfully in general. Mistakes arose principally from arithmetic slips. A few candidates also calculated the simple interest for a year only or wrote $\frac{300\,000 \times \frac{2}{100} \times 5}{100}$ to calculate the simple interest. Cases where candidates added the principal amount to their calculated simple interest were also seen.

Question 22

Question 22 proved quite challenging for many candidates. The performance in part (b) was relatively better than in part (a).

Part (a)

In general, candidates struggled to find the solution to this problem. Quite many did not recognise that the first step towards making a the subject of formula was to do a cross multiplication. Where candidates cross multiplied, often writing the multiplication sign (\times)

instead of using brackets led to incorrect answers. Other difficulties encountered were incorrect application of the distributive law and grouping of terms in a .

Part (b)

A larger number of candidates obtained the correct answer to this part question. Common wrong answers that were seen included 0.33 or $\frac{33}{100}$.

Question 23

Performance in this question was good. It suggests that candidates had a firm understanding of the topic on probability in general.

Part (a)

Many candidates found the probability that the arrow shows an even number was $\frac{1}{2}$. A few candidates overlooked the fact that the spinner comprised 8 sections, not 9. Consequently, they obtained the incorrect answer $\frac{4}{9}$.

Part (b)

A large number of candidates were able to find the probability that the arrow does not show 7 correctly.

Question 24

Candidates fared well in this question. The majority were able to evaluate matrix $2A$. However, some candidates were not able to subtract the negative integers when simplifying the elements of matrix $2A-B$.

Question 25

This question proved fairly difficult to candidates in general.

Part (a)

Few obtained full marks in this question. Mistakes generally arose from numerical slips while evaluating the gradient. In some cases, $\frac{2}{6}$ was simplified to 3 instead of $\frac{1}{3}$. Sometimes the incorrect coordinates were used to find the y-intercept, c .

Part (b)

Many candidates did not identify the problem as one related to inverse proportion. Among those who recognised what had to be done, some stopped at finding the number of men needed to build the wall in 10 days, overlooking that the question asked for how many more men would be needed.

Question 26

Candidates' performance in this question was fair.

Part (a)

In this part question, candidates had to translate rectangle **ABCD** onto rectangle **A₁B₁C₁D₁** and to reflect rectangle **ABCD** onto rectangle **A₂B₂C₂D₂**. Many lost marks because they either did not label their rectangles after performing the required transformation or used inappropriate labellings. In some cases, candidates labelled the translated and/or the reflected rectangles as **ABCD**. In other cases, candidates used the same labellings for both the translated and reflected rectangles.

Part (b)

This part question was often left unanswered. Attempts made were often maladroit. Performance in this question clearly showed that candidates did not master geometrical constructions.

Question 27

Candidates responded well to part (a), but the difficulty encountered increased as they tackled part (b).

Part (a)

The majority of candidates identified and drew the required pattern successfully.

Part (b)

About 4 out of 5 candidates were able to find the value of a in part (b)(i). Fewer candidates managed to work out the value of b in part (b)(ii). A common wrong answer in this case was 7. Even fewer candidates managed to respond to part (b)(iii) correctly. In some

cases, this part question was left unanswered. It suggests that students' understanding and skills to find the general term of a given pattern require further reinforcement.

Question 28

Question 28 was accessible to the majority of candidates.

Part (a)

A large number of candidates drew the relevant bars correctly. Attention is nevertheless drawn to the few cases where candidates drew lines rather than bars.

Part (b)

The correct answer (100°) was seen in many scripts. Some candidates even drew pie charts to illustrate their answer. A common mistake was to divide 360° by 10 giving 36° as an incorrect answer.

Question 29

Performance in this question was fair. In most cases, candidates recognised that they had to find the length of DX first in order to calculate AX. However, many incorrect answers arose from taking DX to be equal to either 8 cm (same as AB) or 12 cm (DC – AB) or 20 cm (same as DC). Candidates also quite readily recognised that they had to use the value of $\tan 40^\circ$ in calculating AX, but quite often wrote the ratio DX/AX instead of AX/DX.

Question 30

Candidates did not fare well in this familiar question. Many overlooked that 'more' represented the difference in the number of shares. Consequently, many rushed to divide 360 by 2 or by 5.

Question 31

This was the second least-well answered question in the paper. A considerable number of candidates did not recognise the problem as one requiring them to formulate a pair of simultaneous equations to be solved. Among those who used simultaneous equations, essential workings were sometimes omitted or numerical errors crept in while solving the equations.

Successful attempts were made by a few candidates who reasoned that the price of 1 pair of shoes and 2 T-shirts would be given by subtracting Rs 3750 from Rs 6750. Consequently, the price of 1 T-shirt would be equal Rs 3750 – Rs 3000. Adding their result (Rs 750) to Rs 3750 then led them to find the price of 1 pair of shoes and 4 T-shirts.

Some candidates used trial-and-error but only a handful of them arrived at the final correct answer.

Question 32

Candidates fared much better in this question than in questions 31 and 33.

Part (a)

The majority of candidates answered this part question correctly. Candidates recalled and applied the formula $2\pi r$ without any major difficulty. In some cases, πr^2 was used instead, showing that some candidates tend to confuse the two, closely related formulae. Emphasis on where and when to use each formula on a regular basis may help dissipate this apparent confusion. It is also noteworthy that in a few scripts, π was approximated to 3.14 or $\frac{22}{7}$ when the question required candidates to leave their answer in terms of π .

Part (b)

Candidates recognised triangle AOB as an isosceles triangle fairly easily, although isosceles was sometimes mis-spelt.

In part (b)(ii), a good number of candidates misused Pythagoras Theorem.

A common mistake in part (b)(iii) was to take OA (13 cm) for the height of the triangle.

Question 33

This was the least well answered question. A significant number of candidates showed inadequate understanding of the word problem. Candidates, in some cases, struggled to express the new length, $(x + 8)$ cm, in terms of the original length (x cm). Identifying the correct relationship between the new area, i.e., $(x + 8)^2$ cm², and the new perimeter, $4(x + 8)$, was equally problematic for a considerable number of candidates. A good number of candidates obtained the relevant quadratic equation, but were not able to factorise the equation which they obtained: $(x^2 - 8x - 128)$. Trial-and-error was quite often used, but very few candidates succeeded in finding the solution to the problem using this method.

Nevertheless, a handful of candidates displayed exceptional mathematical proficiency by considering the new length to be equal to x cm and the original length to be equal to $(x - 8)$ cm which led them to a simpler quadratic equation to factorise and solve: $(x^2 - 24x = 0)$.

A few other candidates also expressed the relationship between the new area and its perimeter in terms of the new length, $(x + 8)$ cm. As a result, they obtained the equation $(x + 8)(x + 8) = 24(x + 8)$ which was easily simplified to $(x + 8) = 24$.