

***EXAMINATIONS COUNCIL OF ESWATINI***

**EPC**

**EXAMINATION REPORT**

**FOR**

**MATHEMATICS (212)**

**YEAR**

**2021**

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**EPC Mathematics Paper 212/01**

**General comments**

Candidates were reluctant to show the necessary working in both sections and this resulted to a lot of mistakes and loss of marks. Some would even use the blank pages at the back to avoid writing in the spaces provided under each question. Candidates had challenges with problem solving questions, perimeter, decimals and percentages. Data handling questions seemed to be accessible for most candidates.

**SECTION A: MULTIPLE CHOICE (40 marks)**

The section proved to be challenging for most candidates. Some were not working out the questions but went straight to choosing one of the given options. Some candidates seemed not to be familiar with the answer grid and would circle or tick their choice under the questions. Some candidates were using ticks or shading instead of crosses as per the instructions. There were those who crossed more than one answer. Blank spaces were also common.

**Question 1**

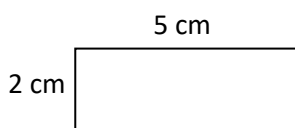
*Choose the symbol that makes the following a true statement: 14 \_\_\_\_\_ 24*

Most candidates were able to choose the correct sign but some confused greater than with smaller than.

**Answer: B**

**Question 2**

*What is the area of the rectangle below?*



Most candidates were able to multiply 5 cm by 2 cm and got the expected response while others forgot about the correct units for area hence choosing 10 cm. Some calculated perimeter and choosing 14 cm<sup>2</sup> as the answer.

**Answer: A**

**Question 3**

*Seven hundred and thirty nine thousandths can be written as*

Some candidates confuse thousandths with thousand thus ended up choosing 739 000 as the answer.

**Answer: C**

#### Question 4

*In its simplest form of  $\frac{35}{42}$  is*

Candidates were expected to divide both 35 and 42 by their highest common factor, 7. Most candidates were able to simplify the fraction correctly while others used different factors resulting to them choosing **C** as the answer.

**Answer: B**

#### Question 5

*Which graph shows the ordered pair (2, 3) plotted correctly?*

Most candidates were able to choose the correct answer except those who made 3 the first number and settling for **B** as their answer.

**Answer: A**

#### Question 6

*When 75 kilometres is changed to metres, it is equal to*

The question required candidates to convert kilometres to metres. Most were able to multiply by 1000 while others multiplied by 100 getting 7 500 as the answer.

**Answer: A**

#### Question 7

*The division of a whole number  $N$  by 3 gives a quotient of 5 and a remainder of 1.*

*What is the whole number  $N$ ?*

Candidates were expected to demonstrate understanding of the terms used in division; quotient and remainder. Most were able to get the correct answer but some did not pay attention to the last part of the statement about the remainder.

**Answer: D**

#### Question 8

*Two angles of a triangle measure  $80^\circ$  and  $40^\circ$ .*

*Which of the statements about the triangle is true?*

Candidates were expected to show understanding of the sum of angles in a triangle,  $180^\circ$ . Most candidates were able to get the correct answer. Others had their focus on types of triangles and chose **A** as the answer.

**Answer: B**

#### Question 9

*A small concrete dam can be filled with 2 280 litres of water.*

*The dam is filled using buckets that each hold 8 000 millilitres of water.*

*How many buckets are needed to fill the pool?*

The question required learners to convert between litres and millilitres. Some candidates ignored the different units and simply divided 2 280 and 8 000.

**Answer: C**

**Question 10**

*Look carefully at the numbers below.*

11, 22, 22, 44, 77, 11, 22, 88, 55, 77, 66

*Which number from the list is the mode?*

Most candidates were able to identify the mode. A few gave 11 as the answer presumably confusing mode and median.

**Answer: B**

**Question 11**

*The LCM of the denominators for the fractions  $\frac{2}{3}$ ,  $\frac{5}{9}$  and  $\frac{7}{12}$  is?*

Candidates were able to identify the LCM of 3, 9 and 12. The common incorrect answer was 24.

**Answer: C**

**Question 12**

*The area of a farm is 7 230 **ares**.*

*What is the area of the farm in hectares?*

A majority of candidates did not know the relationship between **ares** and hectares. They were dividing the 7 230 **ares** by 1000 making 7.23 hectares the most common incorrect answer.

**Answer: B**

**Question 13**

*The faces of a triangular pyramid consist of*

The question required candidates to know the net of a triangular pyramid but they did not seem to be familiar with this kind of a pyramid. The common incorrect answer was **A**.

**Answer: D**

**Question 14**

*Which pair of lines is perpendicular?*

Candidates were expected to identify perpendicular lines and most were able to do that. A few were going for parallel and intersecting lines.

**Answer: B**

**Question 15**

*Nomphilo leaves home at 1535 hours and walks for 30 minutes to the shop.*

*At what time did she get to the shop?*

Candidates were expected to add hours and minutes. Some were able to add getting 1565 hours but failed to change the minutes to hours.

**Answer: A**

### Question 16

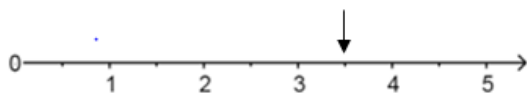
*The number 843 in expanded form is*

The challenging part for the learners was that they had to consider the multiplication first before identifying the correct answer. As a result most candidates chose either **A** or **B** as the answer.

**Answer: D**

### Question 17

*The number line below has numbers from 0 to 5.*



*At what number is the arrow pointing?*

Candidates were able to use the number line. The few who got 3.1 as the answer did not pay attention to the scale.

**Answer: C**

### Question 18

*The mass of one can of beans is 500 grams.*

*A bag contains 24 cans of beans.*

*What is the total mass of the cans in the bag in kilograms?*

The question required candidates to multiply mass in grams then convert the outcome to kilograms. Most candidates were able to multiply 500 by 24 but forgot to change the mass in grams to kilograms.

**Answer: D**

### Question 19

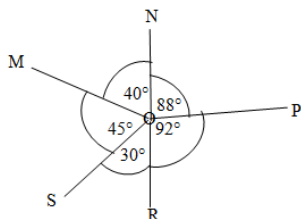
*A polygon that has 7 sides is called*

The question required the knowledge of the properties of polygons. Most candidates were able to name the 7 sided polygon but a few opted for **D**, a hexagon.

**Answer: A**

## Question 20

The diagram below shows angles around point O.



Which of the following angles is **NOT** an acute angle?

Candidates were required to demonstrate the knowledge of the properties of the different types of angles, specifically acute angles. Most candidates were able to identify that one angle which did not have the properties of being acute.

**Answer: C**

## SECTION B: SHORT ANSWERS (60 marks)

Candidates performed better in this section compared to Section A. Candidates seemed not to realise the importance of showing the working that leads to the expected answer. This was evident where candidates would use a pencil for the working then erase after finding the answer. Absence of working led to loss of marks for those questions that were allocated method marks. Some candidates would write different methods and leave the answer space blank, probably expecting the examiner to pick the correct one.

## Question 21

*Sebenele bought a watch at E130.00.  
He sold the watch to Phiwa at E150.00.*

(a) *How much profit did Sebenele make?*

Most candidates were able to subtract E130 from E150. Others however, showed no understanding and added E130 and E150 to get E280. Wrong working of subtracting E150 from E130 was also observed.

**Answer: 150 – 130  
= E20**

(b) (i) *Phiwa later sold the watch at E120.00.*

*Calculate the loss that Phiwa made by selling the watch.*

Candidates were able to calculate the loss. Some students subtracted E120 from E130

**Answer: 150 – 120 = E30**

- (ii) Calculate the percentage loss for Phiwa.

A majority of candidates were not able to calculate percentage loss. A few knew that they had to multiply by 100. Common incorrect workings include;  $\frac{\text{their } (b)(i)}{130} \times 100$  and  $\frac{\text{their } (b)(i)}{100} \times 150$

**Answer:**  $\frac{30}{150} \times 100 = 20\%$

### Question 22

- (a) Look carefully at the pattern below:

1, 2, 4, 8, 16, ...

- (i) State the rule for the number pattern.

Most candidates were writing numbers in the answer space, showing the addition of numbers e.g.  $1+1 = 2+2 = 4+4 = 8+8$  and describing the steps of finding the next terms in words.

**Answer: Multiply by 2**

- (ii) Write the next three terms in the pattern.

Candidates who failed to identify the correct rule of the pattern could not find the correct terms.

**Answer: 32, 64, 128**

- (b) The question required candidates to complete a mapping diagram given the input set and the function of dividing by 3. A majority of candidates were able to calculate the missing output members.

**Answer: 4, 7**

### Question 23

Work out the following:

- (a)  $30\,070 - 30.05$

Most candidates could not align the digits correctly, according to their place values giving 30 040.05 as the answer. Other candidates disregarded the decimal and subtracted to get 330.75.

**Answer: 30 070**

**– 30.05**

**= 30 039.95**



(b)  $18 - 10 \div 2$

Some candidates knew that division had to be done first, however, some would then rearrange the numbers and write  $5 - 18$  yet giving the expected answer from this wrong working. Others started with subtraction to get  $8 \div 2$ .

**Answer:  $18 - 5$   
 $= 13$**

(c)  $0.06 \div 100$

Carelessness; failure to pay attention to detail was observed in this question. Candidates were multiplying by 100, dividing by 10 or 1000 and not putting the decimal point in the final answer.

**Answer: 0.0006**

(d)  $2\frac{2}{5} + 1\frac{1}{5}$

The 3 marks allocated to this question meant that candidates had to show all the necessary steps of their working. Candidates were simply writing the answer without any working resulting to loss of marks. Some were leaving their answer as an improper fraction instead of mixed number. Other common incorrect answers were;  $\frac{12}{5} + \frac{6}{5} = \frac{18}{10}$   
 $= 1\frac{8}{10}$  and  $3\frac{3}{10}$ .

**Answer:  $(2 + 1) + (\frac{2}{5} + \frac{1}{5})$  or  $\frac{12}{5} + \frac{6}{5} = \frac{18}{5}$   
 $= 3\frac{3}{5}$**

### Question 24

The question required learners to describe the transformation shown in a diagram given an object and its image. Candidates were able to identify the enlargement, but the spellings were very incorrect. Candidates had a challenge with finding the scale factor. Some candidates were giving two transformations e.g. sliding enlargement or rotation enlargement.

**Answer: Enlargement, scale factor 2**

### Question 25

*A class of 24 students were asked to name their favourite subject.  
Their choices were recorded as decimal fractions.*

*0.25 chose Science*

*0.3 chose English*

*0.1 chose Social Studies*

*The rest chose Maths.*

- (a) *Write the decimal fraction for the students who like Maths.*

Most candidates knew that they had to add the decimals first but during the addition they failed to align the digits according to their place values thus getting a sum which 0.29. Others would ignore the decimal point and add as whole numbers, then write the answer as a decimal:  $25 + 3 + 1 = 0.29$ . Some of those who did the addition correctly, did not know that they had to subtract the 0.65 from 1.

**Answer:  $0.25 + 0.3 + 0.1 = 0.65$**

**$1 - 0.65$**

**$= 0.35$**

- (b) *There are 24 students in the class.*

*How many students like Science?*

Most candidates were not able to figure out what to do with the 0.25 and 24. They were subtracting 0.25 from 24, multiplying 24 by 25 and adding the two numbers.

**Answer:  $0.25 \times 24$**

**$= 6$**

### **Question 26**

*A rectangular paper has a length of 7 cm and a perimeter of 20 cm.*

*Work out the width of the paper.*

The question required candidates to know the properties of a rectangle and what perimeter is. A majority of candidates seemed to be not familiar with calculating perimeter. The question was poorly done. A variety of workings was observed e.g.  $20 - 7 = 13$  and  $20 \times 7 = 140$ . Some candidates who had an idea of what to do would forget to divide the 6 by 2.

**Answer:  $20 - (7 \times 2)$**

**$6 \div 2 = 3$**

### **Question 27**

The question required learners to show understanding of factors, multiples, even and prime numbers. The instruction was that one different number be chosen for each question from the given list but candidates were repeating numbers, writing more than one per question and writing numbers not in the list. It was observed that 1 is considered to be a prime number by some candidates.

**Answer: (a) 5**

**(b) 2**

**(c) 7**

**(d) 21**

### Question 28

- (a) *How many weeks are in 2 years?*

This question was poorly done. The answer  $48 \times 2 = 96$  was very common since candidates know that there are 4 weeks in a month.

**Answer:  $52 \times 2$   
 $= 104$**

- (b) *Write the place value of 8 in 58 190.*

Most candidates were able to state the place value of 8. Some learners confuse the value of a digit with its place value hence answers like 8 000, 8 thousand and 8 thousandth were observed.

**Answer: Thousand**

- (c) *Round off 1 755 to the nearest 100.*

Most candidates were able to round off correctly.

**Answer: 1 800**

- (d) *What is the most appropriate unit to measure the mass of sugar transported by a big lorry from Eswatini to other countries?*

A majority of candidates were able to state the correct unit but the spelling was poorly done e.g.

tannes, tones and tanes. A few learners were stating either grams or kilograms.

**Answer: Tonnes**

- (e) *Mancoba saves E130 of his pocket money every month, from January to December.*

- (i) *How much will he save in one year?*

Most candidates were able to figure out that they had to multiply E130 by 12 months.

Some candidates used addition instead of multiplication. However, the answers they were getting from the multiplication or addition turned out to be incorrect e.g.

E1 430.

**Answer:  $130 \times 12 = \text{E } 1\,560$**

- (ii) *In December, he decides to take his total savings to a bank that offers 10% simple interest per year.*

*How much interest will he receive after a year?*

The question was poorly done. Candidates seemed not to have an idea of calculating simple interest. Different incorrect formulae were observed:

$$\frac{\text{their (e)(i)}}{100} \times 10, \frac{10}{\text{their (e)(i)}} \times 100$$

and  $\frac{\text{their } (e)(i)}{10} \times 100$

**Answer:**  $\frac{10}{100} \times 1\ 560$   
**= E156**

### Question 29

This was a data handling question where candidates had to interpret a bar chart. This was the most accessible question for a majority of learners.

**Answers:** (a) **Soccer**  
(b) **12**  
(c) **24**

### Question 30

(a) The question required learners to identify solids from a diagram showing 2-dimensional and 3-dimensional shapes named using letters. Most candidates were able to identify the solids correctly while others confused a cube and a cuboid, a circular shape with a cylinder and a square shape with either a cube or a cuboid. Some candidates used names of the solids instead of using letters as per the question.

**Answer:** (i) **B**  
(ii) **D**  
(iii) **E**

(b) Candidates were expected to interpret a pie chart and state the region representing varying number of points for three pupils. The word 'region' was confusing for some candidates and ended up writing the administrative regions; Manzini, Hhohho, Lubombo and Shiselweni. Candidates associate a pie chart with angles in degrees; hence some were measuring the sectors and giving their answers as angles. Some learners were giving the number of points for each for each learner instead of using the letter for each region. In general, learners felt more was from then than just stating the letter representing each region.

**Answer: M, B, L**

### Question 31

*A class of 75 pupils and 5 teachers takes a trip to the game reserve.  
The entrance fee for the teachers is E20.00 and E10.00 for each pupil.*

(a) *Calculate the total cost they paid to enter the game reserve.*  
Candidates were able to find the cost for teachers and pupils but failed to add the two costs in order to find the total cost. Some candidates were not showing their working and hence made errors.

**Answer:  $20 \times 5 + 75 \times 10 = E850$**

- (b) *The vehicles used in the game reserves to drive around seeing animals can only carry 12 people.*

*How many vehicles are needed to carry all the teachers and students?*

Candidates were expected to find the total number of teachers and students to be transported first then divide by 12 or use repetitive addition. Some however, used the 75 which is the number of students only which is incorrect. Some answers were left as a mixed number,  $6\frac{2}{3}$ .

**Answer:  $80 \div 12$   
 $= 7$**

**EPC Mathematics Paper 212/01**

**GENERAL COMMENTS**

A majority of the candidates attempted most questions in this paper. They presented their working in a clear and coherent way. Few candidates presented their answers without showing relevant working. A couple of candidates scored 100%. The mark 0% was seen in this paper. Some candidates lost marks by failing to read questions carefully. Consequently, some candidates appeared to answer questions from previous sessions in some instances.

Compared to previous sessions, candidates attempted poorly the question on tessellation. In addition, in this paper there were noticeable instances where candidates copied incorrectly some of the numbers. For example, in question 7 most candidates tended to miscopy 8 520 as 520. Questions 1(b), 4(a), 8(b) 11(a) and 13(a) were easy for a majority of the candidates whilst questions 5, 9(b), 10 and 12(b) were difficult.

**SPECIFIC COMMENTS ON QUESTIONS**

**Question 1**

(a) A majority of candidates made an excellent start to the paper, gaining all the marks in this item. They were able to calculate the difference between 99 213 and 8 547 as expected. The common incorrect answer emanated from either failing to interpret correctly the mathematical meaning of 'difference' or aligning the digits incorrectly as follows

$$\begin{array}{r} 99\ 213 \\ - 8\ 547 \\ \hline \end{array}$$

**Answer:** 90 666

(b) This item was done well by most candidates. A majority of the candidates were able to work out  $0.6 + 0.85$  as required. The few errors observed in this item resulted from failure to align the digits before adding.

**Answer:** 1.45

(c) In this item, the candidates were asked to complete a factor pair diagram for the factors of 28. A majority of the candidates gave 4 as the correct missing factor as required. The most common incorrect answer was 3.

**Answer:** 4

**Question 2**

In this question, the candidates were given the information that Mrs Mlotjwa has 45 Ares of land and Mrs Zulu has  $780\text{m}^2$  more land than Mrs Mlotjwa.

(a) In this part of the question, the candidates were expected to change 45 Ares to  $\text{m}^2$ . This item was fairly attempted by the candidates. Most incorrect answers emanated from multiplying 45 by either 1000 or 10 instead of 100.

**Answer:**  $4\ 500\text{m}^2$

- (b) In the second part of the question, the candidates were required to determine Mrs Zulu's land. It was pleasing to note that many candidates who failed to change 45 Ares to  $\text{m}^2$  were able to score the follow through mark.

**Answer:** 5 280  $\text{m}^2$

### Question 3

- (a) This item was poorly done. A few candidates were able to complete correctly the multiplication of 8 243 by 75 as expected due to arithmetic errors.

**Answer:** 618 223

- (b) In this item, the candidates were required to write the missing term in the pattern; 1, 3,6,10, \_\_, 21. Many candidates were able to find the missing term in the pattern.

**Answer:** 15

### Question 4

- (a) The candidates were required to complete a mapping in the table using the rule "multiply the input by 3, then subtract 1" for the input 4 and 7 in this item. A majority of the candidates were able to get the correct output after using the rule of the mapping. The most common incorrect output was 12 and 21 which resulted from candidates not subtracting 1 after multiplying the input by 3.

**Answer:** 11, 20

- (b) The candidates were expected to calculate 40 metres as a fraction of 1 kilometre in its simplest form. A few candidates were able to complete correctly the simplification of the

fraction  $\frac{40}{1000}$ . Common errors were dividing by 100, multiplying by 100 and multiplying by 1000.

**Answer**  $\frac{1}{25}$

### Question 5

This question required the candidates to construct a quadrilateral  $FGHI$  by following the given instructions. The candidates were given line segment  $EF$ . Overall a few candidates were able to complete correctly the construction.

- (a) In this item, the candidates were required to bisect the line segment  $EF$ . A few candidates bisected the line segment with the correct construction depicting appropriate arcs. Some candidates bisected the line segment using a ruler and then tried to cheat the arcs. Other candidates only constructed the arcs but failed to draw the bisector as required.

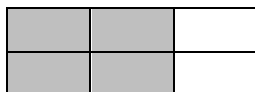
- (b) A few candidates were able to mark  $G$  the point where the bisector meets the line segment as expected.

- (c) A majority of the candidates were unable to mark  $H$  on the bisector such that  $GH = 4$  cm above the line segment as required.
- (d) In this part of the question, the candidates were required to draw angle  $GFI = 90^\circ$  such that  $FI = 4$  cm above the line segment. A few candidates completed this item as required.
- (e) Even though the candidates were told that the resulting shape will be a quadrilateral, many joined their  $H$  to  $I$  forming a triangle.
- (f) In this item, the candidates were required to name quadrilateral  $FGHI$ . Very few candidates reached this stage of the construction. Some of those who reached this stage failed to name correctly their resulting shape.

**Answer:** Rectangle

### Question 6

- (a) In this item, the candidates were required to shade  $\frac{2}{3}$  of the given diagram divided into 6 equal parts. This item involved knowing that  $\frac{2}{3}$  is equivalent to  $\frac{4}{6}$ . A few candidates showed understanding of this fact. Many candidates shaded  $\frac{2}{6}$  of the diagram which is equivalent to  $\frac{1}{3}$ .



**Answer:**

- (b) In This item, the candidates were given the following facts. *In October Futhi had E12 584 In her bank account. In November she deposited E670. In December she withdrew E9 200. Her bank does not charge withdrawal fees.* The candidates were asked to work out the amount left in her bank account, a task that proved to be difficult for most candidates. Many of the common incorrect answers resulted from failure of the candidates to interpret deposit as 'addition' and withdrawal as 'subtraction'. Consequently, many of the weak candidates either subtracted all the given money or added as follows  $E12\ 584 + E670 + E9\ 200$  or  $E12\ 584 - E670 - E9\ 200$ .

**Answer:** E 4 054

### Question 7

This item provided the candidates with this information. *Martha sells chickens to her village and supermarket for a living. She sold a certain number of chickens to the supermarket. She sold 8 520 chickens in her village. In total, she sold 19 284 chickens in her village and supermarket.* The candidates were expected to work out the number of chickens she sold to the supermarket. Many candidates recognized that this item required them to work backwards.



Most lost marks by adding 19 284 to 8 520 instead of subtracting. A few candidates miscopied 8 520 as 520 which simplified the item, thus resulting in loss of accuracy marks.

**Answer:** E10 764

### Question 8

In this question the candidates were given data about the masses of 5 learners in a class. Their masses were 45.1kg, 45.2kg, 45,7kg, 45.1kg and 45.5kg.

(a) In this part of the question, the candidates were required to arrange the masses in order of size starting with the smallest. A majority of the candidates were able to arrange the masses as required. A few candidates lost the mark by starting with the biggest mass instead of the smallest. Some candidates did not write the second 45.1 kg in their answer.

**Answer:** 45.1kg, 45.1 kg, 45,2 kg, 45,5 kg, 45,7kg

(b) This item proved to be straight forward for a majority of the candidates. They were able to state the correct median mass as expected. Most common incorrect response was 45.1kg and 45,7kg.

**Answer:** 45.2 kg

### Question 9

The candidates were given a timetable for a bus travelling from town A to Town E in this question. Generally, this question was poorly done by a majority of the candidates. To get full credit candidates needed to write the required times properly.

(a) This part of the question required the candidates to state the time the bus leave town A. A few candidates were able to identify this time as the departure time from town A. Some candidates wrote 0520h as their answer which is the arrival time. Others lost marks by converting the time to 12- hour time incorrectly such as 5.30 p.m. or 05:30.

**Answer:** 0530h

(b) A majority of the candidates gave the correct answer. This item asked the candidates to state the time the bus arrive at town E. Similarly, to part (a), some candidates lost the mark by failing to state correctly the time. For instance, some gave their answers as 09.30 Or 09:30.

**Answer:** 0930h

(c) In this item, the candidates were required to calculate the time the bus takes when travelling form town A to town E. this item proved to be difficult for most of the candidates. Some of those who were able to subtract the correct times, lost the second mark by failing to give their final answer as time duration. Thus the time 0400h was the most common incorrect answer.

**Answer:** 4 hours

- (d) The candidates were given the fact that the distance from town *A* to town *E* as 80 km. they were expected to calculate the rate at which the bus was travelling per hour. Most candidates found this part of the question challenging. As a result, a few candidates found the correct answer. A Majority of the candidates had no clue what was required of them.

**Answer:** 20 km per hour

- (e) In this item, the candidates were required to calculate the total time the bus stop in town *A*, town *B* and town *C*. A majority of the candidates calculated the total time correctly.

**Answer:** 20 minutes

### Question 10

This item was difficult for a majority of the candidates. In this item, the candidates were given a diagram of an incomplete tessellation. They were asked to complete the tessellation with 4 or more tiles. A majority of the candidates were unable to complete the tessellation. They failed to identify the repeating tile. Most candidates decorated the given tiles instead of adding their own tiles. Some of those who attempted to construct their own tiles, constructed rectangular tiles instead of square tiles as required.

### Question 11

This was a data handling question involving a pie chart with fractions. The data showed the type and number of vehicles that visited Tema's school. The candidates were expected to answer questions using this data.

- (a) This part of the question was easy to a majority of candidates. The candidates were required to name the type of vehicle that mostly visited the school. A common incorrect answer was Isuzu.

**Answer:** Toyota

- (b) In this item, the candidates were expected to write the fraction, in its simplest form, of Isuzu vehicles that visited the school. This part of the question was fairly done. The candidates

got the correct answer using various methods such as  $\frac{90}{360}$ . Some candidates got a mark for failing to simplify their answers as required.

**Answer:**  $\frac{1}{4}$

- (c) The candidates were required to calculate the percentage of Toyota vehicles that visited

the school. This item was fairly done. The most common incorrect answer was  $\frac{5}{8} \times 360$  which a sector angle and not a percentage. Some learners lost the accuracy mark by rounding down their answer to 62%.

**Answer:**  $62\frac{1}{2}\%$

- (a) A sizeable number of candidates understood what was required of them in this part of the question. The candidates were given the information that 40 vehicles visited the school. They were required to calculate the number of Mazda vehicles that visited the school.

Various correct methods were seen in this part of the question such as  $\frac{1}{8} \times 40$ ,  $\frac{40}{8}$  and by inspection.

**Answer:** 5 Mazda

### Question 12

In this question, the candidates were given the information that a road construction company bought 4 500 bags of cement each with 50kg mass. The performance of the candidates was mixed in this question. Part (a) was easy for a majority of the candidates whilst part (b) was difficult.

- (a) In this part of the question, the candidates were asked to calculate the mass of all the bags of cement. A majority of the candidates were able to get the total mass of the bags by multiplying 4 500 by 50 correctly. A few weak candidates added 4 500 + 50.

**Answer:** 225 000 kg

- (b) In the second part of the question, the candidates were required to calculate the smallest number of lorries the company used to transport all the bags if they used lorries that carry up to 6 tonnes. This part of the question was the worst attempted on the paper. There were three parts to this item. The first part involved trying to make the units the same either by converting 6 tonnes to kilograms or 225 000 kg to tonnes. The second part of the item required the candidates to divide the two quantities. The last part of the item required the candidates to decide whether to round up or down the remainder. A majority of the candidates could not complete correctly the first part of the item. A few who were able to complete correctly the first two parts lost accuracy marks by failing to interpret the remainder correctly.

**Answer:** 38

### Question 13

In this question the candidates were given a diagram showing the reflex angle  $PQR$ .

- (a) This was the easiest item for a majority of the candidates. They were able to write the letter of the vertex of the angle as required. A few of the weak candidates wrote  $PQR$  as their answer which was an angle not the vertex.

**Answer:** Q

- (b) The candidates were required to measure the size of the marked angle, that is, the reflex angle  $PQR$ . The strong candidates used mainly two methods to calculate the size of the

reflex angle. Some added  $90^\circ$  to 180 while others subtracted  $90^\circ$  from  $360^\circ$ . Some weak candidates recorded their answers as  $90^\circ$ .

**Answer:**  $270^\circ$

### Question 14

- (a) This item was poorly attempted by most with a few candidates gaining full marks. Some did not attempt the item at all. In this item, the candidates were expected divide  $4 \div \frac{1}{8}$ . The most incorrect method was  $\frac{4}{1} \times \frac{1}{8}$ , a result of failing to reciprocate before multiplying.

**Answer:** 32

- (b) The candidates were given the information that Themba bought  $4\frac{2}{3}$  metres of cloth and that he used  $\frac{4}{5}$  metres of the cloth to make a shirt. The candidates were required to work out the amount of cloth that remains. Most candidates showed lack of understanding of working with mixed numbers. Some were unable to choose the correct operation from the word problem, thus working the item as follows  $4\frac{2}{3} + \frac{4}{5}$ .

**Answer:**  $\frac{58}{15}$  or  $3\frac{13}{15}$

### Question 15

In this question, the candidates were given an information table representing Sakhu's wedding expenses as follows: Decorations = E7 500, Catering = E23 870, Venue = E1 200, Transport = E5 9218, Wedding rings = E14 750 and Tent = E 620.

- (a) A majority of the candidates answered this part of the question correctly. The candidates were required to round off the cost of wedding rings to the nearest E1 000. Some weak candidates gave E1000 as their answer whilst others rounding down to E14 000.

**Answer:** E15 000

- (b) In this item, the candidates were expected to determine how much more was the cost of catering than the cost of transport. Most candidates answered this item correctly. Most common incorrect answer resulted from failing to align the digits. A few weak candidates added the cost of the two items.

**Answer:** E18 652

- (c) Many candidates gave the correct answer to this item. The candidates were able to state tent as the item that was about half the cost of the venue as expected. A few of the weak candidates wrote E600 as the item which resulted to a loss of the mark.

**Answer:** Tent

- (d) The candidates were required to calculate the total amount Sakhu paid for buying 125 kg of beef if each kilogram of beef cost E94. This item was fairly done. Many candidates were able to deduce that to calculate the total amount Sakhu paid for meat they needed to multiply 125 by 94. There were only a small number of incorrect responses that resulted from arithmetic errors. In addition, there were a few instances where the weak candidates failed to interpret the problem correctly, thus adding 125 and 94.

**Answer:** E11 750

### Question 16

In this question, the candidates were given the information that a doctor advised Futhi to feed her daughter 1 800 millilitres of milk each day for 5 days. In addition, Futhi feeds her child using 300 millilitres feeding bottle. Overall, most candidates did not perform well in this question.

- (a) In this part of the question, the candidates were required to calculate the number of feeding bottles Futhi need to feed her child each day. An average number of candidates were able to answer this item correctly. These candidates either divided 1 800 by 300 or subtracted 300 from 1800 repeatedly until they got 0. Some of the weak candidates subtracted 300 from 1800 once. Others divided 300 by 5.

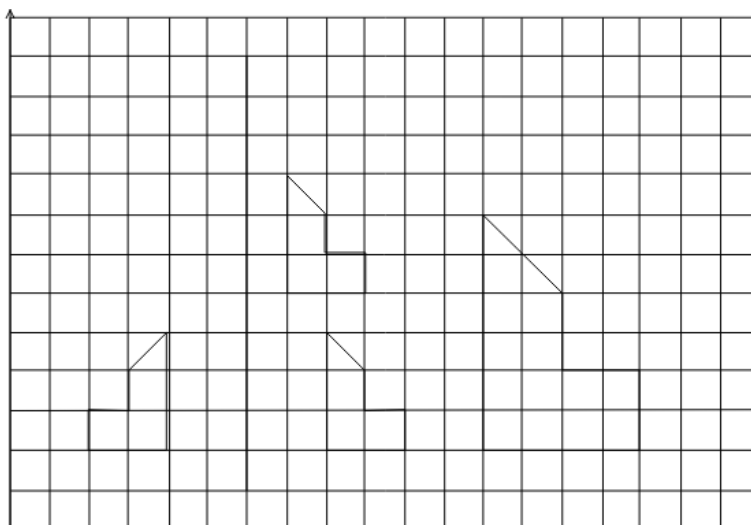
**Answer:** 6

- (b) In the second part of the question, the candidates were expected to work out the amount of milk Futhi needed to feed her child for 5 days in litres. Most candidates were able to multiply 1800 by 5 as expected. However, some lost a mark by failing to convert 9000ml to litres. Some of the incorrect answers resulted from arithmetic errors when multiplying 1800 by 5. A few of the weak candidates multiplied their answer to part (a) by 5 which was incorrect.

**Answer:** 9 litres

### Question 17

In this question, the candidates were given a figure showing a coordinate diagram with the line  $XY$  and polygon  $M$  drawn on it. Almost all the candidates attempted this question.



- (a) In the first part of the question the candidates were asked to state the number of sides of polygon  $M$ . Most candidates were unable to give the correct number of sides of the polygon. The most incorrect answer was 5 sides.

**Answer:** 6 sides

- (b) In the second part of the question, the candidates were required to reflect polygon  $M$  on the line  $XY$  and name the image  $N$ . A majority of the candidates were able to reflect polygon  $M$  on the line  $XY$  as required. Some reflected correctly but failed to label the image correctly, hence losing a mark. A few candidates reflected the polygon without recognising the line of reflection.

**Answer:** See diagram

- (c) In the third part of the question, the candidates were instructed to plot the points  $(12,2)$ ,  $(16,2)$ ,  $(16,4)$ ,  $(14, 4)$ ,  $(14,6)$ , and  $(12, 8)$  on the coordinate diagram. Furthermore, the candidates were required to join the points in the given order to form a polygon  $P$ . A majority of the candidates were able to plot the coordinates correctly. The most common incorrect answer resulted from failing to join the points in the given order.

**Answer:** see diagram

- (d) In the last part of the question, the candidates were expected to slide polygon  $M$ , 1 left 4 up, labelling the image  $Q$ . A majority of the candidates failed to slide the polygon correctly. Some of the weak candidates changed either the size or the shape of the image.

**Answer:** see diagram