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Principal Examiner Feedback

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Functional Skills Mathematics
Level 1 (FSM01)

PEARSON

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Functional Skills Mathematics Level 1

Introduction

Overall the response to this paper by the candidates was a positive one; most candidates attempted the majority of the questions. Calculations relating to money, in particular best value offers, producing a time plan and producing a data collection sheet were often successfully answered.

It is important that centres highlight the embedded nature of Functional Skills Mathematics to prepare the candidates for the range of contexts in which the exam questions may be set. If the skills required are embedded into a range of lessons e.g. using ratio to calculate quantities, designing a time plan to meet given constraints, drawing a graph to present findings, using a scale plan to position and draw an item within given constraints; the candidates will become adept at the skills without becoming alienated by lessons in mathematics.

A calculator is allowed in all Functional Mathematics exams and is an essential piece of equipment for all candidates. It is clear that some candidates are not using a calculator and are showing pen and paper methods for basic calculations. Centres should ensure candidates are prepared for the exam with correct equipment. However although candidates should be encouraged to use a calculator they also need to show all stages of their working in order to gain process marks and to present answers with the appropriate units. Marks in Functional Skills Mathematics are awarded for the process; conversely marks may be lost if candidates do not show their processes.

It is of great importance that candidates take note of the working box icon. When the icon is present it is essential for working to be shown in order to gain full marks for the question.

Report on Individual Questions

Section A

Question 1
It was encouraging to see a variety of fully correct solutions to this question, few questionnaires were seen and a small number of axes drawn for collecting the information into a bar chart. Most produced a functional data collection sheet but many candidates failed to include the time slots as well as the list of drinks. Centres should encourage candidates to read the question fully and provide opportunities for candidates to practice producing data collection sheets to record data collected within given constraints.
Finding a quantity using a given ratio was generally unsuccessful; whilst the amount of carbonated water needed was often correctly calculated a common error was not to add the cola concentrate to the amount of carbonated water in order to find the amount of cola drink. Finding a total quantity from a given ratio does require practice in a range of contexts in order for candidates to be successful in an exam situation.
This section that required candidates to find a likelihood of an event which was impossible was answered correctly by the majority if candidates. Some candidates lost the mark through stating that the event of buying a hot chocolate was unlikely, candidates need to be aware that there is a difference between unlikely and impossible.

Question 2
Many candidates could draw a graph or chart correctly plotted and with sensible scales for this question. Although most candidates labelled their axes a few omitted this and lost marks. It would be beneficial to encourage candidates to give their graph/chart a title as this would gain credit even if the axes label was forgotten. Scaling often has a significant impact on the correct plotting of the information and candidates who chose 'difficult' scales were often handicapped by their choice of scale and made errors in plotting. Practice at selecting appropriate scales in a variety of contexts would be helpful. Candidates should also be aware that a broken scale that does not start at zero is acceptable; this may assist the candidates to identify an appropriate starting point.

Question 3
This question required working out the best option for purchasing tickets and was correctly completed by most candidates who clearly understood the demand within the context of a Theme Park. Some marks were lost through the assumption that the 12 year old was a child, practise at interpreting boundaries of over, under and equal to would be helpful in exam preparation classes.
It was pleasing to see that nearly all candidates stated their units in their answer to this question. 1m=100cm was seen without an actual conversion, as were incorrect conversions, but many managed to correctly identify the 2cm short. However the requirement to convert metres to centimetres or the reverse is fundamental at level 1 and should be reinforced regularly in the classroom.

Section B

Question 4
Interpreting a train timetable is a useful level 1 skill and many candidates were able to demonstrate their understanding of the timetable and of lapsed time correctly. Common mistakes were to select the departure time for a different train or to calculate the time to leave home incorrectly. Similarly the calculation of the journey time was generally successful, those who were unable to complete this correctly either worked with decimals or seemed unaware of how to approach working with time.

Question 5
Nearly all candidates were able to access the time plan question and many gave a fully correct answer. Some lost marks as they did not work with all of the constraints indicated within the question. Candidates need to focus on the bulleted or indented constraints to ensure that they were fully encapsulated within the time plan in order to gain full marks. A significant minority of candidate's included all the favourite acts and therefore did not gain the final mark. Careful reading of all the information in a question is required to be fully successful.

Question 6
This question was understood and completed correctly by nearly all candidates, a few interpreted the information for cola rather than water but credit was given for a process correctly completed.
Working out the cost of food and drink for the group of friends proved more challenging to candidates and many were unable to correctly identify the food and drink as 6 baguettes and two lots of £2.79 for the cola. Many also forgot to include Anka in the calculation. In this case candidates were not penalised for this omission but candidates do need to read the questions fully and identify the functional context.

A significant number misread the money Anka used to pay for the food and drinks as £20 and ignored the **two** £20 notes. This tended to make their response trivial and process marks were lost.

The last part of this question, where candidates were required to decide whether each of the friends paying £5 for their food and drink was fair, was thoughtfully answered by candidates. A wide variety of approaches were demonstrated here though unsuccessful candidates failed to support their decision with calculations and therefore gained no marks.

Section C

Question 7
This was a multistage problem which the majority of candidates were unable to access and few were able to provide a complete and valid response. Most candidates were able to correctly identify the largest tile as being 30 cm by 30 cm although a significant minority selected a 20 cm by 20 cm tile. Understanding the vocabulary of mathematics is important in Functional Mathematics and should be included in the candidates' preparation for the exam. The majority of candidates were unable to make a reasonable attempt to work out the number of tiles needed to cover a given floor area. Those who attempted this question could often work out the number of tiles needed for one length of wall but were unsure how to progress further, or, in some cases they worked out the number of tiles along a second wall length and added these two values.
It is important that centres provide their candidates with practice in working through multistage problems in a range of contexts.

Question 8
Most candidates were able to demonstrate their ability to draw a rectangle to scale within a given constraint (i.e. in a corner of the room). A few lost marks for not positioning the shower cubicle in the corner of the room and there were some errors in the dimensions. Accuracy is crucial to success in this type of question.

Question 9

It was pleasing to see that the majority of candidates calculated the area of the room correctly and many made an excellent attempt at using the given rule to find the airflow needed. However some candidates still get confused between methods to find area and perimeter and a number of answers of 14 were seen. Problems also arose due to the units of m^2 where candidates were uncertain of the implication of the ^{2} and therefore doubled or squared their area. This led to difficulties later on in the question as the airflow calculated did not relate to the given fan sizes. This was an opportunity for candidates to check that their answers were fit for purpose and make sense, an activity which candidates need to be encouraged to complete.

The selected fan was often not the correct one for the calculated airflow even when the previous error had not been made and again careful reading of the question would help to avoid this error. It was pleasing to see a significant number of fully correct solutions to this problem.

Pass mark for FSM01

Maximum mark	48
Pass mark	30
UMS	6

Note: Grade boundaries vary from year to year and from subject to subject, depending on the demands of the questions.

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