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Principal Examiner Feedback

May 2012

Functional Skills Mathematics
Level 1 (FSM01)

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General Comments

A number of candidates tackled the paper well, with clear evidence to suggest that they can work in a functional way and are having opportunities to experience real life maths in context and have the skills to apply their mathematics in unfamiliar situations. In a number of cases, candidates were able to gain full marks from certain sections. In some cases it was clear that candidates had not used a calculator; this led to far too many arithmetic mistakes and would have taken the candidates far too long to work out the answers. Centres are asked to ensure that all candidates are equipped correctly.

There are a number of questions that require a decision or a conclusion following the mathematics. Candidates should ensure that they check the question and ensure they have confirmed they indeed have made a decision or drawn a conclusion to complete their answer.

Candidates must ensure that the process of how they come to an answer by showing all their working is clearly shown: in real life there is more than one way to get to an answer and that rarely is it the case that only one way and one answer is acceptable. Candidates should ensure that even though they are using a calculator they show all stages in their working. In a number of cases throughout a question paper, correct answer only written down, without working, may only be credited with one mark, when the whole question may be worth 4 or even 5 marks: it is here that the process marks are important and must be shown. For instance when multiplying or dividing, the process of repeated addition is acceptable as a method and is often what we would do in real life.

Centres should therefore ensure that preparation for functional mathematics is based on real life situations and not those that are made up or contrived. Candidates should be prepared to check their answer is fit for purpose such as interpreting graphs, devising a time plan, finding a numerical value and giving a data collection form.

In questions that involve comparing possible values to draw a conclusion from them, those students who took a little time to analyse each situation having separately worked out these values were invariably well rewarded, especially if they came to a conclusion relating to their figures. Breaking down a question into its component parts and coming to a judgment is an important aspect of these processes, and with so many problems being multi-stage it is essential that candidates show a methodical approach and plan their answers carefully.

In addition, questions that involve an explanation, candidates must realise that their answer must be supported by mathematics.

Report on Individual Questions

Question 1a
This question was generally done well, with many candidates scoring full marks. Of those that did not score the 2 marks, many did not take into account all of the constraints correctly and did not allocate correctly the activities in the correct places. Some responses gave run 3 times as one activity and also gave more than one activity on a day. Candidates should be reminded to read through the information provided and check their answer is fit for purpose.

Question 1b
This question performed very variably with many candidates scoring 2 marks but forgetting to answer the main question with yes or no. In certain cases candidates who divided 500 by either 14 or 35 did not give a suitable degree of accuracy. Some candidates chose to show a build-up method to 490. Candidates should be reminded to show their processes in full and then the full answer; they then should be encouraged to check the original question so they can see what decision needs to be made. For instance a result of 490 does not mean No, even though it is not exactly the 500, but means they can get the 14 drinks with some left over.

Question 2a
Many candidates did not answer this question in full, and instead stated that the time decreased every week. Candidates should be encouraged to check that what they have written makes sense. In this case the times are generally getting shorter but not for each week. In some cases, candidates incorrectly interpreted times getting less as getting worse.

Question 2b
Some good graphs were seen. Candidates should be reminded that all graphs should show a correct linear scale that covers the range of the data, labels for each axis, and correct plotting for each item..

Question 2c
This question on a word formula was done well with many candidates scoring at least 2 marks out of the 3. Most responses seen involved inputting the 98 and working forwards to give 226. Some responses involved working backwards from 240, getting the 105 and then comparing this with the 98. The last mark was often not scored due to candidates not making the correct decision or making no decision.

Question 3
This question was not answered well. Candidates can be prepared for such multi-stage questions: breaking the problem down into manageable parts and highlighting the requirements of such a demand may help with questions of this type.
Common errors with this question involved multiplying by26 but giving 633 instead of 633.10, getting 229 minutes and then £229 instead of £11, and adding the numbers to £1000, rather than subtracting them. Correct money notation was needed for the final mark for £305.90, and this was often missed.

Question 4

Although many candidates gained some marks for this question, it caused problems and few gained the full 5 marks. The main issue was the requirement to perform appropriate calculations which would enable the costs to be compared with the budget; common mistakes were recognising where charges were for the week or for the whole two weeks, and also whether the cleaning should also be included. Candidates should practise multi-stage problems where a systematic approach is required, highlighting important information. Questions such as calculating wages where there is a rate per hour in addition to a 'flat-rate' bonus are examples of such as well as comparing best buys.

Some candidates found that Villa Adele was within budget and went no further. Candidates should be reminded that all calculations are required and should read the questions carefully to avoid losing marks unnecessarily. Here many lost marks by not putting in sufficient explanation, for example, they found all the values (2620, 3000 and 2700), but did not work out the budget and just assumed this figure. Some stronger candidates found the correct solution Adele and Charlotte but felt it was unnecessary to calculate Bastien when it is over budget. Many just put a cross by Bastien. Candidates need to check their solutions at the end to make sure they fit the demand of the question.

Question 5a

This question was well answered with candidates using a variety of methods successfully. Most unsuccessful candidates did not fully show their workings. Many were unable to find the length of time between 9.30am and 2pm accurately. Time period practice is essential. Many who did this by counting on in hours were counting both ends of the interval and arriving at 5.5 hours rather than 4.5. Also, there was some misunderstanding when interpreting their results; some candidates showed correct working but then gave the wrong decision i.e. 'would get to Paris at 1.30 pm' and then said 'no they would not arrive by 2 pm'. Again, practise with word problems and using highlighters would enable students to fully understand what the question requires.

Question 5b

Generally this was well answered. Some students, again, did not fully understand that the question required further calculations other than simply finding ¼ of 80. Candidates need to practise writing down all their workings as showing they understand the process gains marks in addition to the calculations.

Question 6a

This was generally well answered, and almost all were awarded the mark.

Question 6b

This was another question with a great deal of information and constraints to consider, needing very careful reading and checking, and those candidates who failed to gain full marks almost certainly did not check their final solution against the constraints.

Again, a systematic approach is crucial to answering this question by avoiding clashes and ensuring all criteria are adhered to; many candidates lost at least 1 mark by starting with Steam train at 12.15 pm which was too early for their arrival time of 12.20 pm. Encouraging students to check their answers fully will give them another chance to spot mistakes.

Apart from not applying the constraints in the question, the other main problem was in working out times: quite a number chose Cheese tasting at 1.40pm and then worked out that this would finish at 2.00pm and their next activity would be the House Tour at 2.00pm

More practice is needed on this sort of question - working with time differences and applying the constraints and restrictions. Checking that their solution is fit for purpose by again reading through the demand, will help candidates to check that their solution fits.

Question 7
Candidates very often scored just one mark here. Few candidates attempted to indicate any sort of boundary around the pond and decking and often put a correctly sized flower bed too close. Many candidates ignored the scale altogether and gained no marks.
Centres need to work with scale drawings on cm squared paper, and work with basic loci. Candidates should be reminded to check that their solution indeed fits the demand and constraints that have been set.

Question 8
Many unsuccessful candidates used a ratio of 1: 3, dividing 100 by four and leading to the answers 25 red and 75 cream. Candidates need to have opportunities to use ratio in practical situations.

Question 8b
This question was generally done well. There were, however, candidates who confused the area and perimeter and consequently lost the marks.
Candidates again needed to check the demand of the question and confirm that a decision should be made. An answer of 42 without a decision was too often seen.

Question 8c
This was not always answered well with many candidates struggling with multi-stage problems. Many were able to work with the sand and total weight via one of the methods. They then failed to continue to calculate the total cost. Too often an answer of 1350 or 6 or 54 was seen, then nothing else, showing that candidates were not too sure what they were doing with their answers and how they were to progress.
Centres need to encourage candidates to set out their work in stages with some written comments on what they are calculating. A string of numbers found using the calculator is often seen, and is difficult for the candidate to check, as well as for the examiner marking their work.

Question 9
Candidates did well overall on this question. Perhaps the “buy one get one free” or “buy one get the second half price” offers we are bombarded with in supermarkets and shops nowadays have had a positive effect!
Again the setting out of work by some candidates made it difficult to follow and indeed some mixed up the two offers. Candidates should be encouraged to set out their work carefully and clearly so they can follow what they are doing.

Pass mark for FSM01

Maximum mark	48
Pass mark	31
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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