

# Principal Examiners' Report February 2011

FS

## Functional Skills Mathematics Level 2 (FSM02)

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## FSM02 - Functional Skills Mathematics Level 2

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### Introduction

Most candidates attempted the majority of the questions and gave thoughtful answers to the problems set. Overall candidates found questions most difficult when the context was unfamiliar to them, the question was open-ended or multi stage. As candidates are required to show success in problem solving in real life situations these types of questions are an essential part of functional skills papers. Centres need to ensure that candidates are offered many opportunities to solve such problems in preparation for the tests.

Many candidates did show their working clearly and were consequently able to obtain process marks. Centres need to place emphasis on the meaning of the notepad symbol as some candidates are ignoring the key need to show **clear** working. Those candidates who provided no working or disorganised working made it very difficult to credit their efforts. Awarding credit in multi stage problems was particularly difficult when a candidate's communication was poor.

Candidates need to understand that when dealing with questions that require them to 'explain their answer', it is important to provide both a decision and a reason for it. Centres need to place emphasis on understanding of functional language such as 'overcharging', 'budget' and 'survey'.

Calculating with time is a functional skill which is very poorly done. Candidates need to practise adding times in many functional contexts.

Candidates should be encouraged to ask themselves whether a data collection sheet they have produced is fit for purpose. They also need to practice choosing a suitable linear scale for a graph.

Candidates sometimes missed key elements in questions. Centres should place emphasis on highlighting, underlining or circling key information in questions to minimise the errors caused by lack of careful reading.

There is evidence that some candidates are not using calculators. Centres need to ensure that there is always access to a calculator during the test and, when preparing candidates for the test, encourage them to make use of a calculator.

## Report on Individual Questions

### Question 1

Part a) was often poorly done. Common errors included writing 22 hours 30 minutes as 22.3 or calculating 5 lots of four and a half hours as  $4.3 \times 5 = 21.5$ . Other candidates used a 7 day week. Centres should teach candidates the proper use of a calculator when dealing with time problems.

Part b) This question was often well done. The majority of candidates use the 10% +5% method to calculate 15% although there was more use than in previous tests of the multiplier method. Some candidates performed the correct calculations but then failed to make a decision. This may have been because they did not understand the functional term 'overcharged'.

### Question 2

This question was less well done than 1b). Too many candidates did not understand the meaning of 1.5W, others added 1.5 and 12 to get 13.5 before multiplying by 20. Centres need to provide practice in substitution and also extend to examples of use of formulae in a variety of contexts where decision making is required. There are examples on past papers.

### Question 3

There were many complete solutions here. Candidates often used the entries given as a model for their own work. Centres should stress to candidates that following a given model is a good idea. Those who did not gain full marks had often missed one detail such as the name of the client.

### Question 4

This question proved testing. Many candidates did not appear to understand the units they were working in, or that they needed to compare like with like and instead completed meaningless calculations such as  $170 \div 4.54$ . Those who did find appropriate values often failed to compare them perhaps because they did not understand what the values represented. Breaking down multi stage problems is a skill which needs to be practised frequently.

### Question 5

In the majority of cases, candidates were able to score at least 2 of the 4 marks available. A minority of candidates did not understand the difference between a survey for data collection and a questionnaire. These candidates often put a lot of thought into what questions should be asked about road safety, but did not deal with the requirements of the problem set. Centres should try to build in practical activities or sessions where candidates discuss data capture in a variety of contexts. In this question candidates who highlighted salient points were often most successful in providing a solution which incorporated all of the requirements.

### **Question 6**

Part a) Most candidates were able to convert between inches and centimetres, although a few did not realise that they must then choose a suitable size from the table. These candidates attempted to adjust the table data to get an exact match for 86.36.

Part b) Candidates are unclear what a mathematical check means. Few attempted the required reverse calculation, but many instances of repeating the previous calculation or suggesting that Chris sit on the bike and try it out were seen. Candidates need to understand what type of check, whether reverse calculation or estimation or comparing their solution with given constraints, is appropriate in a wide variety of contexts and calculations. They need to be made aware that just repeating their previous working will not score the checking mark.

Part c) The best candidates were able to answer this question with the minimum of working. The most commonly gained marks were for the conversion of units, although some candidates did not know the correct conversion factors. Many who calculated successfully the number of litres which could be made from the tin contents did not go on to find the number of 750 ml bottles, thus losing 2 marks. A further mark was often lost by using 5 as the average number of scoops rather than 4 to make the maximum number of bottles. In this multi stage question, it was difficult to award process marks where the working was disorganised.

### **Question 7**

This question highlighted candidates' lack of ability to process time. There were frequent uses of 24 minutes 21 seconds as 24.21 when adding time. The candidates who scored best were those who compared time differences in the 5 races where both took part. Making a valid decision on who was faster proved testing, as some candidates did not realise that the faster person took the shorter time.

### **Question 8**

Some candidates did not attempt this question as they did not know what a net was. Centres should ensure that all candidates have the opportunity to disassemble boxes in order to see what a net looks like and then to make boxes when given their dimensions. Those who attempted the question were often successful in gaining the first two marks but then failed to state the length and width of rectangular card needed for their net. Some stated 4 cm by 3 cm as they did not understand the difference between the terms net and face.

### **Question 9**

Part a) was done well. Many candidates scored both marks here.

Part b) often scored the mark for good communication of labels, however there is a clear need for practice in choosing suitable linear scales to enable data to be plotted.

**Question 10**

Part a) It was clear that many candidates did not know how to use a calculator to simplify a fraction. Time was wasted on attempts to cancel using common factors. Others failed to write down even an unsimplified fraction thus losing both marks.

Part b) was another example of candidates' lack of ability to solve a multi stage problem. The first 2 marks were often scored for a non calculator method to calculate 5%. It was disappointing how many candidates failed to continue beyond this point. Centres should provide many examples of multi stage problems and teach candidates how to break them down into their component parts to solve them in staged calculations.

Pass mark for FSM02

Maximum mark	<b>48</b>
Pass mark	<b>27</b>
UMS	<b>6</b>

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

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