

# Principal Examiner Feedback

May 2012

Functional Skills Mathematics  
Level 2 (FSM02)

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## **General Comments**

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 'time plan,' and provide situations that allow candidates to practice the skill.

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.

Candidates need additional guidance on checking. It needs to be emphasised that a repeat of the previous working is not acceptable as a check. The difference between a check and a cheque also needs to be made clear.

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.

In some instances it was clear from the response to the graph question and the isometric drawing that some candidates had no pencil, eraser or ruler.

## **Report on Individual Questions**

### **Question 1a**

This question was well done. Most candidates realised that only six pairs of earrings could be made and supplied either appropriate division(s) or found multiples of 8. Most understood that earrings came in pairs only a few failed to understand that the large and small beads were part of the same set and added six and seven to obtain a final answer of 13. The most common incorrect answer was 7 but these candidates gained the first mark for correct working. 'Real life' rounding is something that could be usefully practised in class, giving particular attention to situations where more than one constraint needs to be considered.

### **Question 1b**

This question proved challenging. Most candidates were able to calculate 40% of a cost, although some did not show a clear process. Candidates need to be encouraged to show the process clearly as a method mark can then be awarded even if the answer is not correct. Many candidates did not work consistently with costs for 1 necklace or costs for 20 necklaces. Centres should advise candidates to read the question carefully and highlight the important information as this would help to prevent this type of error. Unfortunately some candidates who had done all the processing correctly lost the accuracy mark because they did not state the answer in correct money notation. Candidates need to be reminded that correct units should always be included with answers.

### **Question 1c**

Many gained full marks for this question. Of those who were less successful it was evident that some had no calculator. Division by 2.54 is not easy without one. Those who engaged with conversion generally did well, although some rounded their answer incorrectly (50cm seen). Those who misinterpreted often multiplied the centimetres by 2.54 rather than divided by it.

### **Question 2**

Almost all candidates engaged with this question and the majority scored at least 2 marks. Plotting was generally accurate but some were clearly hampered by their poor choice of scale. Those who missed out on a mark often used inappropriate or incorrect scales (e.g. 1050 instead of 1500 or starting from 500 even though the lowest figure they needed to represent was 400). Occasionally, the labels were incorrect (autumn/winter missing or no reference to sales or £). Some combinations of bar and line graphs were seen, but this did not prevent the candidate from gaining full marks. There were clearly some candidates with no ruler, pencil or eraser. It was sometimes difficult to discern their intentions when they changed their mind about how they would display the graph. The front page of the test does list the equipment that a candidate needs to have and centres are advised to ensure that it is available.

### **Question 3**

Most candidates were able to access this question, with many gaining 3 out of 5 marks. Those who planned well and gave clear start and finish times with indications of location generally gained full marks. The incorrect solutions often had periods of inactivity at the start usually coupled with periods of jewellery making after the 4pm deadline. Others failed to indicate times of the day clearly hoping that repetition of the information given e.g. 25 mins, 45 mins and 40 mins (the travel times) would be acceptable without the appropriate interpretation. Some did not realise that the start and finish times of the meeting in Wick were fixed and could not be varied or amended. A minority forgot to allow the minimum of 45 minutes for a lunch break. It is quite possible that reading the question carefully and highlighting key information would help candidates to avoid these mistakes. Candidates should be encouraged to give the start and end times of each activity, including travelling between towns / home when setting out a time plan. This type of question where the candidate is required to show a high level of independence is a mainstay of functionality and centres are advised to offer opportunities for the skill to be practised in a variety of contexts.

### **Question 4**

Most candidates were able to tackle this question and gain at least 2 marks, but some lost marks as they did not check they had met all constraints in their solution. In particular some did not present the activities Craig should do on a day by day basis or ensure that there was no more than one high effort per day. The majority did ensure that there were at least 2 water sports. However some did not show cost calculations to demonstrate that they knew that they were within budget. Candidates should be aware of the importance of presenting their work clearly in this type of question. Checking constraints in the question against the solution they had found might have ensured that candidates realised the deficiency of their first solution and allowed them to improve it. One way to help candidates to prepare for this type of question would be to provide them with situations in context where there are multiple constraints and give them a selection of partially correct solutions to evaluate.

### **Question 5a**

Most candidates were able to evidence the correct process to calculate the mean of Erin's score, but a substantial number did not go on to explain why they had made the decision between Erin and Tess to do the target shooting. This is another example of why candidates should be reminded to check they have answered the given question. A minority of candidates calculated the median for Erin, which was clearly inappropriate in this instance because it was to be compared with the mean for Tess.

### **Question 5b**

This question was attempted by nearly all candidates and many were able to show their ability to calculate at least some of the points to be deducted. However some then deducted from the time rather than the 5 points which each person started with showing poor reading of the question set. Nearly all candidates whose calculations were correct were able to interpret the best score as being -3 rather than -5.

### **Question 6**

The majority of candidates were able to make a sensible comment on the two data sets. This is always a useful activity to include in class when data sets are being used.

### **Question 7**

Those candidates who converted between metres and cm before accessing area were often more successful than those who attempted the conversions in square units. Many candidates believed that  $100\text{ cm} = 1\text{ m}$  also meant that  $100\text{ cm}^2 = 1\text{ m}^2$

Other candidates did not attempt to use consistent units and ought to have recognised that their answers were unlikely in the extreme. Candidates should be encouraged to ask themselves if their answer makes sense.

There were also instances where correct answers were found to allow comparison but then the interpretation was wrong or omitted. This type of multi stage problem occurs in many functional situations and should be practised in preparation for the test.

### **Question 8a**

Those candidates who attempted the formula question were in the main able to substitute correctly. There were some instances of  $6^2 = 12$  but these were in the minority. However many who found the volume correctly as  $98.91\text{cm}^3$  then failed to realise that it would not hold 100 ml of the product even though 'use  $1\text{ cm}^3 = 1\text{ ml}$ ' was stated. Use of basic algebra is on the specification and centres are advised to ensure that candidates are able to substitute and evaluate. Practising the skill is essential and doing so in contexts to suit each candidate's workplace activities or interests might make it seem more relevant.

### **Question 8b**

Candidates were often able to score 2 marks here. Many good answers were seen. Successful answers showed how to use a 2 way table to collect 3 types of data items. However, there were too many two way tables which only dealt with gender and age where the inclusion of a simple key for like or dislike would have produced a full solution. Some candidates did not know the difference between a questionnaire and a data collection sheet and centres are advised to spend some time working in practical contexts with both types. This is another situation where useful test preparation could be setting up a question in context and offering partially correct solutions to candidates, then getting them to evaluate how 'fit for purpose' each solution is.

### **Question 9a and 9b**

A disappointing number of candidates thought multiplying by 0.3 was a correct way to work out one third of an amount. Again candidates who did not show a correct process to calculate 15% lost the method mark if their answer was not correct. A significant number were unable to decide how they should combine the reductions and some added the reduction from the wages to the amount that would be spent on other items. This meant that they did not have a useful value to compare. Centres should consider using multi stage problems from past papers as discussion material when preparing candidates for the test.

Very few valid checks were seen. Candidates need to understand that repeating the same calculation again is not acceptable as a check. There needs to be a different method used, or a reverse calculation, or a sensible estimation.

### **Question 10a**

It was clear that many candidates were unfamiliar with drawing on an isometric grid. Candidates should be made aware that when using an isometric grid in the orientation given there cannot be any horizontal lines. Many candidates drew a cuboid but not to the dimensions given, perhaps because they counted dots instead of spaces. A few candidates attempted to draw nets of the cuboid rather than a 3D representation.

### **Question 10b**

This question was often done well. There were two issues for those who did not score full marks. Either they did not know that June has 30 days or they made an incorrect decision or no decision having done correct calculations. Candidates should be provided with opportunities to use calendars and diaries as part of a practical problem.

### Pass mark for FSM02

Maximum mark	48
Pass mark	29
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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