

# Principal Examiner Feedback

January 2012

Functional Skills Mathematics (FSM02)  
Level 2

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## General Comments

Overall the response to this paper by the candidates was a positive one; the best buy and baby milk questions were often successfully answered.

However, the evidence presented in this paper suggests that some candidates:

- are not using calculators effectively to process arithmetic;
- may not have access to calculators whilst sitting the paper;
- are not as well prepared as they might be.

By their very nature, functional questions involve arithmetic operations and data handling techniques. Candidates did encounter problems addressing some of the questions because they appeared to lack a calculator.

2. In order to gain marks for process, a key element in functional skills examinations, the candidate should show working and a clear methodology. It is not the case that correct answers always earn full marks: the process by which the answers have been arrived at attracts the majority of the marks.

Candidates need to be encouraged to read questions very carefully in order that they are able to handle the conditions and constraints that functional mathematics questions provide.

3. Organisation of the work is crucial for the award of marks: disorganised working spread across the working space attracts few marks simply because the process followed is not clear. This is particularly important in functional skills exams because candidates are having to answer open questions and need to describe the process through reasoned mathematics and relevant argument. Centres need to continue to place emphasis on the meaning of the notepad symbol as some candidates are still ignoring the key need to show clear evidenced working.

4. Overall, candidates found questions most difficult when they were not directed: that is, the more open multi-stage questions. Centres need to continue to offer opportunities for solving this type of problem in preparation for examinations in functional skills.

5. It is evident that careful reading of questions, and use of required detail is essential when aiming for high marks. Techniques such as underlining, highlighting or emphasising key words or phrases in each question was evident in the work of high scoring candidates.

6. In functional questions, the facility to reflect on whether the final answer is reasonable is important. Candidates need to reflect on whether the final answer is reasonable in the context of the question.

7. Questions sometimes require a candidate to make a decision as well as process arithmetic. Candidates need to be aware of this and remember to indicate clearly their final answer.

## Report on Individual Questions.

### Section A

Q1(a) Many candidates attempted a build up method to find 75%. Some gave sufficient evidence to demonstrate a complete process by addition of the 'parts'. Rounding during the calculations sometimes led to inaccurate answers although most demonstrated enough of the process. Candidates who found 75% profit usually proceeded to provide a correct solution.

From the candidates' responses it is clear that many are comfortable calculating 50%, 25%, 10% and 5%. However, a significant minority were not able to correctly complete the task. Use of an efficient multiplier was evidenced less, but with greater success.

Some candidates found 75% but then failed to add the costs to their answer. Candidates usually provided their answers in correct money notation.

Q1(b) Some candidates provided a range of answers for 14 -17 kg over the week. Repeated addition of 12.5 kg was often seen – some candidates obviously feel uncomfortable with division, particularly if a calculator is not available. However, most coped well.

The majority of candidates demonstrated their understanding of this question by showing the processes leading to their answers. Candidates rounded appropriately realising that the number of sacks would have to be rounded up in real life to accommodate the amount required. A few candidates failed to show any working and just gave the number of sacks required. Giving an answer of 7 sacks from 1 sack per day was the most common incorrect answer.

Q1(c) Candidates completed this part of the question accurately according to their answer in part (b). Some failed to write their answers in correct money notation, answers of £37.5 were quite common for 10 sacks.

Q2 Many candidates were unable to complete this multistage problem. Clear processes were sometimes evidenced. However, the majority of candidates were unable to make sufficient progress in finding a cost for baking the bread. Candidates need to prepare for the exam by practising independently finding solutions to multistage problems.

There were some very well written, clearly explained answers to this open question but these were in the minority. A significant majority were unable to correctly convert between grams and kilograms, many converting 25 kg to 2500 g. It would be helpful for candidates if they identified what the values represent once they have completed a calculation e.g. cost per kg of flour. This would assist with making a correct decision on the next step of the process.

Q3 This question was generally well answered with many candidates gaining full marks. A minority of candidates failed to produce a data collection sheet. Some candidates lost marks as their data collection sheet was a table with the three courses listed, leaving the server to write out each person's order in full. This is inefficient; a key, tally or tick box system is required for an efficient data collection sheet.

## Section B

Q4 This question was well answered with the majority of candidates gaining full marks. The context (staff ratio) was well understood. The mathematical demand was accessible, helped by the numerically low multiples of ratio values. A minority appeared to be unable to link ratio to a functional context.

These candidates would benefit from more preparation in understanding what a ratio is used for.

Q5 The majority of candidates were able to place a linear vertical scale on the graph paper and plot points or draw bars. However, a minority were unable to produce a linear scale. This skill requires practice. The majority of candidates did not communicate what the vertical scale represented. Therefore, full marks were not awarded. Centres need to ensure that candidates know labels are required. A useful approach would be to show learners several graphs (with errors or omissions) and discuss what the errors or omissions might be.

Q6 This question was successfully answered by the majority of candidates. Clear processes were evident and candidates used a variety of methods to arrive at the correct result. Some candidates were unable to complete more than one step of this multi-step problem and attempted a trial and error approach, usually without success. A small number completed the mathematics but failed to answer the question, 'Is she right?'

Q7 This question was not answered well by an overwhelming majority of candidates. Many candidates calculated the volume using mixed units, but were unable to proceed further. Few recognised the significance of 300mm and failed to convert any dimensions appropriately. Few used the factor of 3. Candidates were challenged to think in 3D and 2D. The majority were unable to do this. A minority of candidates resorted to multiplying all values together with no clear direction.

## Section C

Q8 This question was in two parts and the majority of candidates were able to make progress in the task. In part a) some candidates did not convert their answer from litres to gallons whilst others incorrectly interpreted the amount of fuel in the tank. In part b) many candidates were able to use their answer in a) to correctly state that Fraser did not have enough petrol to drive to Dover.

Q9 This question required candidates to select appropriate mathematics to decide in which supermarket to buy boxes of chocolate. From some candidates a working strategy was not evident. Success depends upon being able to make a direct comparison between costs by ensuring the cost for the same number of boxes is found. A significant minority of candidates were able to find costs but a comparison was not able to be made because unequal numbers of boxes were considered.

Q10 A few candidates were able to gain full marks. Most candidates were not able to handle time effectively within the constraints of the question. At level 2 candidates are expected to successfully bridge units of time whilst adding a period of time to a 'clock time.' The majority of the candidates did not handle the context well: some subtracted the rest periods from the route time. Other candidates appeared not to check their answers: for example, a leaving time of 1300 might be checked by adding on 8hrs 50mins.

Q11 The majority of candidates were not able to coordinate speed, distance and time. However, a sizeable minority of candidates were successful in the task. The formula is offered to candidates if they wish to use it. Some candidates fully understood the meaning of km/h and found the distance that might be travelled under the speed limit restriction (  $130 + 65$  ) km and correctly concluded that Fraser will not reach the ferry check in time.

## 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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