

Principal Examiner Feedback

May 2013

Functional Skills Mathematics
Level 2 (FSM02)

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General Comments

Overall there was a positive response to this paper; many candidates attempted and gained marks in many of the questions. Drawing a graph, comparing data sets, calculations relating to finding the number of bottles of grape juice, the length of time for exercise and the number of calories used in cycling were often successfully answered.

The multistage problems are a challenge to many candidates. Centres should consider providing their candidates with practice in working through a wide range of multistage problems during exam preparation. The strategy of highlighting or underlining the pertinent pieces of information in a question would improve success for many candidates.

Centres should also remind candidates to show all stages of their working, even when they are using a calculator, in order to avoid losing marks for process. There is some evidence that not all candidates use a calculator during the exam which is a significant handicap to the candidates concerned.

Report on Individual Questions

Section A

Q1 – For the first part of this question many candidates struggled to find the quantity of flour required for 400 cup cakes though most could correctly compare their answer to 3 kg. The use of direct proportion is a useful skill in many situations and centres should consider providing the candidates with plenty of opportunities to practice using direct proportion in a range of contexts.

The second part of the question required candidates to produce a dimensioned 3D sketch of a box to contain 16 cupcakes. Candidates were often unable to draw a representation of a cuboid and could generally only find one dimension correctly. Providing a box over 1 m by 1 m for cakes is impractical and centres should encourage candidates to check if their results make sense.

Q2 – The first part of the question was answered successfully by candidates with the majority gaining two marks and often losing the third mark for failing to label both axes or for incorrect plotting when a difficult scale had been used. Candidates would benefit from opportunities in class to produce fully labelled graphs with titles where they have had to select an appropriate scale.

The second part of the question, where candidates had to compare the two sets of profit figures, was generally successfully answered. Candidates who failed to achieve this mark often just quoted from the given data or considered the data for one year only.

Q3 – This was a multistage question and was poorly attempted by many candidates who did not appear to read the question carefully. Those that were able to make a reasonable attempt at the question did not include the cost of making the boxes of cupcakes thus failing to provide accurate answers for their comparison. It was disappointing to note a significant number of candidates were unable to find 75% of a given price which is a Level 1 skill. Many used a discount of 25% effectively reducing the price to 75% of the original rather than 75% off or compared total takings rather than profit. Providing candidates with practice at this style of multistage problem along with ensuring Level 1 skills are secure before progressing to Level 2 would be helpful.

Section B

Q4 – Many candidates managed at least 2 of the 3 marks available in this question. Extracting information leading to a total of £46.60 was accessible to many. There was confusion over how many pairs of glasses were needed with 4 being a common choice. Some candidates failed to realise that buying a family ticket would lead to the smallest answer of £50.40. Exam practice using questions of this type where a discounted price (often a group ticket) can be a saving would be useful for candidates. There was some evidence of a lack of suitable working being written down but just a correct answer and decision. Candidates should be reminded that all working should be shown as process marks are frequently lost when only incorrect answers are given.

Q5 – In this question, many of the candidates were able to correctly find the start time of the second showing of the two films but the majority of these failed to incorporate the requirement for the two films to start 15 minutes apart. It is important for candidates to check that their solution meets all the constraints given in the question in order to gain maximum marks. It was disappointing to see that a significant minority of candidates struggled to calculate with time correctly particularly converting minutes to hours and minutes.

Q6 – The first part of this question required candidates to work out one third of the money raised by selling 120 tickets and to compare this to a given required figure of £290 and was successfully achieved by the majority of candidates. Those who were unsuccessful generally were unable to work with one third, attempting to use $\frac{3}{10}$ or 30% which gave an inaccurate answer. Centres should remind candidates of the need to maintain accurate figures throughout their calculations, rounding at the end if necessary to provide a functional answer in order to gain full marks.

The second part of the question required candidates to find the number of 750 ml bottles required to fill 120 glasses of 125 ml capacity. It was pleasing to note that the majority of candidates were able to find the correct answer of 20 bottles.

The last part of the question required candidates to find the probability of winning a raffle prize. Most candidates were able to answer this successfully but a significant number lost the second mark through using an incorrect presentation of their probability. Candidates should be reminded of the correct way to present probability before sitting their exam.

Section C

Q7 – Adding a series of elapsed times to find a total time and correctly comparing the answer with 5 hours was the requirement of the first part of this question and proved very accessible to the majority of candidates who were able to answer this correctly and draw a correct conclusion.

The second part of the question was less well completed but many candidates were able to find the average distance from swimming pool length and number of lengths during a 4 week period. However the number of candidates who followed the instruction to check their calculations was a very small minority. Candidates should be encouraged to check their calculations as a matter of good practice but marks are lost when a check is specifically requested and not demonstrated.

Q8 – This question required candidates to substitute into a given formula and compare the resulting answer with a given range. Many were successful but the most common error was to misinterpret 1.73^2 as 1.73×2 , others lost marks through rounding answers to early in the calculation thus losing. A formula question is common in Functional Mathematics papers and exam practice in substitution into a given formula and correctly interpreting the resulting answer would benefit candidates.

Q9 – The first part of this final question required the calculation of a missing value from a given mean. The majority of candidates tried to find the mean of 6 values or tried a trial and improvement method. Both methods led to minimal success. This question requires working with two sets of figures, the total allowed and the total achieved. It would be useful for candidates not only to practise calculating statistical measures but also to fully understand what these measures represent and how to work with a given mean.

In the second part of this final question the majority of candidates successfully converted pounds to kilograms and from that selected the correct number of calories consumes from the given table. However a significant minority failed to multiply by 2.5 for the two and a half hours and thereby lost the final mark.

Pass mark for FSM02

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|--------------|----|
| Maximum mark | 48 |
| Pass mark | 28 |
| 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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