



# Examiners' Report

October 2017

Pearson Edexcel Functional Skills  
Mathematics Level 1 (FSM01)

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## **Introduction**

This level 1 paper included questions based on the contexts of visiting a skyscraper, opening a toy shop and living on a budget. Some of the questions required interpreting graphs and diagrams which were mainly accessible to the learners. Although some learners had difficulty working with the less familiar diagram in question 4(b) as well as Q8(b) which learners may have found easier to solve if they had drawn their own diagram.

## **General comments**

Most learners attempted the majority of the questions on the paper and engaged with the contexts. A significant number appeared not to have the use of a calculator for this paper which was a distinct disadvantage. Centres should remind learners of the importance of taking their calculators to the exam and centres should prepare them in their effective use. A substantial number of papers contained lengthy arithmetic calculations. The additional time learners devote to these calculations can often result in them being unable to complete the paper in the allocated time.

Learners should be encouraged to read the questions carefully and check they have provided a full answer to the question. They should also understand that when they are asked to explain their answer, it is important to provide a decision and a reason for it. It should be emphasised that examiners award marks for the process and need to see how the learner arrived at their answer. Many learners confuse the order for writing the numerator and denominator in a division calculation which can cost marks on the exam paper.

It was pleasing to see that more learners are providing checks when required, although some still leave the working box empty or rewrite their original calculation. There are three marks awarded for checking on the exam paper which can make the difference between being successful and not. Centres should emphasise that learners can provide a check for any part of their working. Using a reverse calculation is usually the easiest approach. i.e. showing a subtraction following an addition, or a division following a multiplication or vice versa.

## Section A

### Question 1

This question was about extracting figures from a table and working out a difference in cost. This question was answered well. The majority of the learners identified the correct values to work with from the table and were able to find the difference between the total cost using correct money notation.

The most common errors were working only with children's prices or only with adult prices and not both. Accuracy marks were often lost due to calculations being done by hand instead of using a calculator, especially when subtracting the different costs to find the saving.

### Question 2a

This question was about using a flowchart formula. Most learners engaged with this question and it was answered well. Several learners went a step further than required and identified that the formula would work if 22 was added instead of 8. Of those learners who did not gain full marks, some failed to write down a conclusion after correctly substituting into the flowchart.

### Question 2b

This question was about working with fractions. This question was answered most successfully by those learners who correctly worked out  $\frac{3}{4}$  of 96 to get 72 and comparing with 64, to conclude Veronica was not correct. The learners who tried to express 64 as a fraction of 96 to compare with  $\frac{3}{4}$  were often less successful. Some learners did not understand the relationship between 64, 96 and three quarters and divided 96 by 64 then abandoned the question. Others subtracted 64 from 96 to gain 32 but did then not know how to proceed and abandoned the question.

### Question 2c

This question was about extracting figures from a table and using a scale factor. Many learners were able to correctly interpret the scale and identify the heights required from the bar chart. However, a substantial number of learners misinterpreted the scale and worked with 90 as the height of the Clock Tower. These learners were still able to access 2 out of the 3 marks, as were those who used 100 and those who used the incorrect value for SkyPoint, despite the fact this height was given in Q2a.

### **Question 3**

This question was about working with average and demonstrating a check. The majority of learners started this question well and divided the total number of visitors by 365. Learners were able to gain both marks for the calculation for dividing by 364, 365, 365.25 or even the correct number of days which was 366. It was surprising to see that a few learners did not seem to know how many days there are in a year and so were unable to answer the question. A few worked out  $365 \div 800000$  and so were unable to access any of the marks.

Other errors included apparent difficulty in copying down the answer from a calculator display, particularly the placement of the decimal point. Commas were used to separate 'thousands' but some were used inappropriately and on occasions were mistaken for decimal points.

A pleasing number of learners provided a valid check, usually demonstrating a multiplication as the reverse process for a division.

## **Section B**

### **Question 4a**

This question was about working with a scale diagram. Many learners seemed to struggle with this question and did not engage with the straightforward scale employed in this question. Of those who were able to draw two correct rectangles, 2 squares by 8 squares, a substantial number were unable to also meet the required constraints, the most problematic being 150 cm away from the counter.

Some websites offering kitchen and bathroom fitting have interactive software facilities for design, which can be helpful to practice working with scale in context.

### **Question 4b**

This question was about working with perimeter. It was one of those on the paper that caused most problems for the learners. A number seemed to struggle with the diagram and failed to understand which rectangle dimensions were involved, with many not realising that 300 mm had to be subtracted from 1250 mm before working out the perimeter. Many were unable to work with consistent units in their calculations, the most common error was using  $100 \text{ mm} = 1 \text{ m}$ . A number of learners misinterpreted the question and thought the shortest length of lights needed to be bought i.e. 4 m.

Practice in working with as many practical situations as possible involving lengths of items and converting e.g. between mm, cm and m would prove useful support for learners.

### **Question 5**

This question was about working with a route and time. This question was answered well, the majority of learners engaged with the context and were able to convert between fractions of an hour and minutes. Common errors included adding the times incorrectly, not including the 30 minutes travel time from the depot to shop C and failing to provide a decision.

### **Question 6a**

This question was about working with likelihood. The majority of learners gained the 1 mark allocated to this question, realising the likelihood was impossible as there were no white stickers in the bag.

**Question 6b**

This question was about working with a scale factor and demonstrating a check. This was a well answered question. The majority multiplied 25 by 18 to get 450 cm and most went on to provide a valid check. Marks were lost by not giving units with the answer or not providing a check.

Centres should remind learners that it is always good practice to identify the units with their answer when working with measure.

## Section C

### Question 7a

This question was about working with percentage.

This was a well-answered question. The majority of learners were able to work out 20% of £160 and gained full marks. The most common method was to multiply by 20 and divide by 100. A few learners realised that 20% is equivalent to  $\frac{1}{5}$  and successfully divided by 5 instead.

Some learners knew that they had to divide and multiply, to find a percentage, but some did this in the wrong order. i.e. 20% of 160 is found by calculating  $100 \div 20 \times 160$  and NOT  $20 \div 100 \times 160$ . Other learners wrote 20% of 160 and proceeded to multiply by 20 forgetting to divide by 100. Despite finding 20% being a common calculation, the majority of learners trying to use the 'build up' method failed, often finding 10% or 50% then not being able to proceed with the calculation. Other learners subtracted the £30 from £160 and then tried to find 20% of 130.

### Question 7b

This question was about working with mean and demonstrating a check. This question was a good discriminator to check the learners' understanding of the mean process. Most learners realised they should divide the total by 5 despite the fact that one of the values was 0. Some learners found the total spend for the 5 days which was £17.65 and compared this with  $\text{£}3.70 \times 5 = \text{£}18.50$ , which indicated a good understanding of a mean average.

Some learners did not accompany their answer with a decision and some divided the total spend by 4, which meant they could only achieve 2 out of the 3 marks. Learners seem to perform well when asked to provide a check for a mean calculation, following the division with a multiplication, as was the case in this question.

### Question 8a

This question was about extracting a figure from a table. This was a well-answered question with the vast majority of learners correctly extracting the value 25 from the table.



### **Question 8b**

This question was about working with proportion in a practical context. This question was another of those on the paper that caused most problems for the learners. A number seemed to struggle to engage with the problem, many started by multiplying the length of one row by 4 to work out the total length available for planting and then tried to find the number of seeds required, thus completely misunderstanding the problem. Those learners who used a diagrammatic approach to tackle this question often performed well, as it made clear that 6 lots of 15 cm available allowed for 7 seeds to be planted in each row.

Learners should be encouraged to use diagrams where appropriate, to help them visualise the problem.

### **Question 9**

This question was about working with proportion in a recipe.

A large number of learners struggled with this question. Many seemed to select values given in the question at random to multiply and/or divide without demonstrating any real understanding of how to work with proportion. Marks were also lost by not working with consistent units. Of those learners gaining full marks, some found how many bowls of soup could be made with 6000 g while others worked out the weight of tomatoes needed to make 45 bowls. The majority of the calculations were done in grams before comparing with 6 kg, which should be converted to grams for a valid comparison.

Marks were lost by not knowing the conversion of g to kg and/or by not understanding, or using the fact that 750 g of tomatoes made 5 bowls of soup. Again, the absence of a decision, or the wrong decision lost the final mark.

Proportion questions based on recipes are common in functional maths papers and centres should ensure learners are given the opportunity to practice strategies to tackle this type of question.

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