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Examiners' Report

January 2018

Pearson Edexcel Functional Skills Mathematics Level 1 (FSM01)

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Introduction

This Level 1 paper asked a selection of questions set in the contexts of a rowing club, keeping rabbits and the opticians, and required learners to demonstrate a broad range of the skills given in the specifications at this level.

General comments

The majority of learners seemed well prepared for the exam. They were able to engage with the demands of the questions appropriately and it was pleasing to see that almost all learners appeared to have access to a calculator resulting in fewer arithmetic errors then previous series.

Most learners gave workings with their answers and in only a few cases showed no working out at all. Where no workings are shown, learners risk losing process marks if they arrive at an inaccurate final answer so writing down every step is to be encouraged. Where learners approach a question in two or more different ways they must make it clear which one they want to give as their final answer. Both methods are marked but the lower mark of the two (or more) is the one that is recorded.

Some learners did not gain all 3 check marks on the paper, most carried out the first check but many did not write down the second and third checks required by the paper. Learners should develop their checking skills and show them clearly when asked to do so.

Learners who did not give decisions when asked a question such as ‘Is Luke correct?’ were unable to score the final mark for that question. Learners should ensure that they have answered the question asked, as well as the calculations they have carried out and that they have given the units that their final numerical value represents.

Areas that learners would benefit from practising include two-way data collection sheets and recognising when to find either the perimeter or the area of a shape. Learners should also be given the opportunity to practice recognising and comparing place value for numbers of any size.

Section A

Question 1a

The first question was a straightforward mean calculation, which required learners to make a decision and show a check of their working. The check here was demonstrated clearly by many learners and a decision given in most cases. Some misinterpreted the decision as the answer needed to be below the value given in the question for Luke to enter the race rather than above. Occasionally a learner worked with two totals rather than finding a mean and the scored full marks for this approach. A few learners found the median instead of the mean and scored no marks for process. At this level the mean and range are the only statistical values tested and learners should be encouraged to calculate and check these efficiently and accurately (using BIDMAS) when required.

Question 1b

The vast majority of learners scored full marks for this worded formula and decision. They could carry out both steps of the process and compare two 3 digit numbers correctly. A few learners worked backwards using the figure they were given to compare with and were also able to score full marks with this method.

Question 2

This question was multistep problem in the familiar context of scaling up recipes to see if Luke had enough oats. Almost all learners could work with the smoothies when the recipe was given for 1 drink and 4 were required. The second recipe was for a batch of 8 energy bars and 50 were required in the question. Many learners struggled to deal with making any partial batches so worked with 6 or 7 batches and gave a final answer based on this which lost the final 2 marks available. The most successful method involved working out the weight of oats needed for each bar and multiplying that by the number of bars required. Many learners did not show a correct conversion between grams and kilograms for any of the amounts in the question so could not score the conversion mark. Stating 1000g=1kg is not sufficient for this mark, it must be applied to at least one of the values given to demonstrate its application.

Question 3a

This question asked learners if the amount in a given cell of a table was a fifth of the total amount. Learners needed to add together the 4 figures given, then divide the total by 5 and give a decision based on this answer. Most learners carried out these calculations accurately and gave a valid decision. Some did not realise they had to work with the total and divided the given cell value by 5, others divided the total by 4 possibly because there were 4 values even though the fifth was given as a fraction. Carefully extracting the demands of the question is crucial to score all marks.

Question 3b

This question tested the skills involved in place value by giving a large number in words and asking learners to enter the figures onto a cheque. The number was twelve thousand and ninety six. A common error was to miss the middle 0 although a few gave extra zeros or transposed digits. Place value is a vital skill across many topics within maths and should be practised accordingly.

Section B

Question 4a

This question asked if two rabbits could fit in an area given how much they each need. The majority of learners gave the correct answer and decision, however some doubled both the area needed by each rabbit and the area available due to not reading the question demand carefully and made it unclear which numbers they were comparing and could not score the second mark.

Question 4b

This question asked for the area of Ben's 5m by 6m lawn. Most learners could find the area but many did not give the correct units and lost the second mark. Some learners worked out the perimeter and score no marks. Learners need to be able to recognise when and how to find an area rather than a perimeter (and vice versa).

Question 5a

The majority of learners approached this scale drawing onto a grid successfully. Almost all managed to meet at least one of the constraints for the run or the hutch and many gained full marks. Some learners drew a correct run and a correct hutch but either did not leave a walkway around the run or positioned the hutch outside of the run and lost one of the available marks. A final check of the constraints in the question against their drawing may have helped learners to spot any errors and correct them.

Question 5b

This question required learners to work with the perimeter of a shape and three rolls of fencing with dimensions given in different metric units. Most learners approached it successfully and many only lost one mark for not showing a valid unit conversion (as in question 2). Some learners, who gave an incorrect conversion, compared their perimeter with 6000 and did not calculate the combined length of 3 rolls as they did not need to and could only score 1 mark. A few tried to find the area instead of the perimeter (as per question 5a) so again should be encouraged to find a way to remember the difference.

Question 6

Learners were asked to compare two different calculated amounts using a percentage and to show a check of their working. It was pleasing to see that most were able to find a percentage of an amount but a few divided by the percentage instead of 100. A lack of careful reading meant that a significant number of learners did not multiply the second amount by 2 or halve the first in order to compare as required by the question. Only a minority showed a check of their working. Learners should ensure that they read the questions carefully and ensure they are giving all the information required, in particular a check of any part of their working when specifically asked for one.

Section C

Question 7a

Finding and comparing the differences between two pairs of decimals was required here to see which eye strength had changed the most between appointments for a customer at the opticians. The most successful responses clearly set out two subtraction sums, one for each eye and followed this with a correct decision. However, a number of learners gave just one difference and could only gain one mark. Others ignored the decimals when giving answers. Where they did this, and did not show workings, no marks could be awarded. A few learners compared 0.5 with 0.25 and gave 0.25 as the biggest difference suggesting more practice is needed in calculating with decimals and comparing their place values.

Question 7b

This question required learners to find the total cost of an eye test, frames, lenses and insurance. The insurance costs were given in a table for a range of values of the total cost of the frames and lenses. Again, careful reading was vital here to gain full marks. Many learners chose an insurance value for the total cost *including* the eye test and some chose two insurance costs where they insured the frames and lenses separately, this meant they lost two marks. A few learners added all of the given insurance costs rather than just the correct one. The final mark was for the correct answer with correct money notation. It was pleasing to see most learners gave their final answer in money format.

Question 8a

Here learners had to choose the smaller of two negative numbers in an unfamiliar context with the majority of learners identifying the correct one.

Question 8b

A straightforward price comparison for buying contact lenses in bulk or individually which was completed successfully by the majority of learners with a minority not showing the required check of their working or, less often, multiplying the cost of a box of 90 lenses by 90 as a result of less careful reading of the question.

Question 9a

Almost all learners attempted to construct a data collection sheet. The majority gave at least one of the categories, age or eyewear preference in a table format. The most successful approach was to construct a two-way table and label the numbers as ages so it was clear what they represented. Many learners gave less efficient tables that required two inputs per person. Some learners misinterpreted the question and gave a pie chart or bar chart but these are for representing data that has already been collected rather than to allow collection of the raw data as required. Input opportunities are essential for a data collection sheet and learners should be encouraged to think about where they would enter their data to ensure a table is functional. Some overlapping age groups were seen and in some cases learners did not use the age ranges given in the question.

Question 9b

Here learners were required to extract a percentage figure from a pie chart and compare it to a quarter. The majority of learners were able to identify the correct section of the pie chart or begin to convert a quarter to a percentage in order to compare. Some learners lost the final mark for not showing both figures clearly. Recognising and using equivalences in percentages, fractions and decimals is a valuable skill that learners should practise often to improve the confidence.