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Examiners' Report

November 2016

Pearson Edexcel Functional Skills Mathematics Level 1 (FSM01)

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Introduction

It was positive to see that centres have continued to support learners and develop skills in line with the feedback from our previous principal examiners' reports. On a number of scripts, but not enough, learners had demonstrated their examination preparation skills by underlining key words in the text, highlighted key data required to access questions and to begin selecting the mathematics required. Those that did this, did very well. Centres should continue this practice, as it is clearly impacting on the success of candidates and their responses.

General comments

Many learners had a ruler and presented tidy and functional diagrams and most learners had a calculator available, allowing them to develop accurate answers to our questions. It was only in a minority of cases that learners were not prepared for the examination with the required equipment and stationery to undertake the examination effectively. It is best practice to read through the guidance on the front cover carefully. This may be done as a group before learners commence the examination, along with any checks that learners have all of the appropriate equipment before starting.

Learners continue to record each of their processes on the paper showing each stage towards the final answer, however, in a minority of cases, some learners did not show all of their working, or did not work methodically and tidily, using all of the available space to answer their question fully.

Learners should be encouraged to review how many marks are required to achieve full marks for the question and consider whether they have undertaken an appropriate number of processes to achieve full marks.

Where learners are required to make a decision, a simple yes or no answer is expected and those candidates that remember to make a decision pick up valuable marks on their way through the paper. In too many cases learners are not concluding the question with a decision.

Learners should be reminded that they should display their final answer in correct units, as in a number of places on our papers, marks are attributed to displaying units. As preparation for level 2 progression, learners should also be encouraged to show their answer to an appropriate number of decimal places, particularly when their answer requires this in functional application, such as working with money.

Learners need to plan their time more carefully. For the November series, many learners ran out of time and did not attempt the more challenging area and perimeter questions that were at the end of this particular paper. For those that did attempt these questions, many confused area and perimeter. This question was particularly challenging for learners as they had to select the correct information from the diagram to work effectively with area and perimeter. Those that were able to distinguish the difference effectively were most successful as they were able to take a more confident and methodical approach to working through the processes and selecting the correct mathematics to use.

Many learners struggled to access the ratio question and perform the two processes required to demonstrate functionality when using ratio. Ratio is a challenging level 1 skill and is often not given enough time during learning programmes; often being left to the end of longer programmes due to the foundation of skills required to understand fully this concept. Centres should provide learners with more time to consolidate the skill of working with ratio and allow for the practical and functional aspects to be practiced using everyday practical activities and scenarios, such as; diluting and mixing liquids, combining ingredients in recipes and other mixtures. Ratio can also be used as an extension task to statistical problems to help place ratio into a ready established context; giving learners more exposure to ratio without having to reset a functional backdrop for the calculations.

Learners accessed the first, less demanding, time question on the paper effectively and it was very pleasing to see learners working well with elapsed time that spanned across noon. However, learners had less success on the more demanding time question 5b, which required learners to work with distance and speed to find a time.

Learners worked effectively using the statistical mean and it was pleasing to see that learners had developed good functionality with the two processes required to demonstrate a thorough understanding of mean. It was also pleasing to see that some learners had a detailed understanding of different methods to work with mean, selecting alternative methods to check their answers and understanding the processes of mean with enough detail to reverse them to check their working effectively.

Learners continue to miss out checking questions, which are indicated by a tick within a box on our papers. Centres should consolidate with learners what is meant by a check, as many learners merely repeat their calculation to check it is correct, they do not use appropriate checking methods to check accuracy of their answers, such as reverse calculation, estimation or alternative methods. Learners often lose 3 valuable marks on our papers, as there are 3 explicit checking marks at level 1 and level 2.

Section A

Q1

Learners accessed this question in most cases and worked effectively by counting on or counting backwards with time. Learners worked well by counting past noon effectively and were able to display their answers in standard and 24 hour clock. Learners worked functionally through the calculation and provided a robust conclusion.

Q2a

Most learners accessed the percentage question, however, many did not demonstrate a thorough understanding of how to work with percentage. Many learners did not check their working and did not correct their mistakes. Unfortunately, many learners divided 200 by 3 and started to confuse percentage with working with thirds; this led learners to display a final answer of 66.667. Learners should be encouraged to read the question very carefully when working with percentage. Many learners presented a final answer of £140. Where this was clearly described as the final payment following the 30% reduction and showed the £60, learners were not penalised, however, where learners had only presented a final answer of £140 or not adequately describe what they had done with the £60; unfortunately, learners lost marks, as they had not correctly answered the question.

Q2b

Many learners were able to access the scale for this measure, shape and space question. Learners developed solutions to meet the constraints and presented tidy work where they had a ruler. In the minority of cases, some learners did not check their final answer met all the constraints and some learners did not draw rectangles to the correct scale.

Q3a

There were some very pleasing answers to this question and most learners were successful at working with a half of a cost. Most learners then continued to combine the half by adding to 3 or subtracting from 4 to achieve a final answer. Some learners forgot to make a final decision and lost the final mark. Although not awarded for this question, it was pleasing to see that some candidates had made the effort to present their final answer in correct money notation, which should be encouraged.

Q3b

Learners accessed this question by identifying a correct scale factor and were able to continue through the question effectively to identify the best buy. Learners that were unable to find the scale factor for the best buy were not able to access any further marks within the question. Learners did not check their answers, which would have been sensible for a large mark weighted question. Learners could have checked by working with the price for one card or by working in batches of cards as presented in the question. Both of these methods were awarded equally and this question may be used in future by centres to demonstrate to learners alternative methods as an appropriate check to facilitate learner's access to explicit check marks.

Section B

Q4a

Many learners accessed the graph question and presented some good functional graphs. Those that had a ruler worked tidily and efficiently.

Learners were provided with a start point to develop a sensible scale, however, many did not continue the scale correctly, advancing the scale in 10s as opposed to 5s. This also challenged learners' plotting skills, as many learners were particularly challenged by plots that did not intercept the major and minor lines on the graph paper, as the scale increased by 2 small squares. This question is a particularly good example for centres to use to support formative assessment of learners graphical representation skills, as it challenges learners to work with a more sensible scale for aesthetic purposes, but a scale that learners would not ordinarily choose themselves due to the challenge of plotting some of the numbers. We will continue to provide learners with a start point for the axes where this is deemed appropriate to ensure a functional graph that allows clear differentiation for the figures to be plotted.

Many learners did lose marks for not labelling their axes or providing a title that clearly described the axes. This was disappointing, as our graph questions have developed a standardised approach to awarding marks for labels, along with plotting and working effectively with scale. This has been mentioned by previous principal examiners in their reports.

Q4b

It was pleasing to see that learners used their graph or referred to the table to make a full comment about the information. Our expectation is a simple sentence, it was very pleasing to see that learners had written more than a simple sentence; however, centres should remind learners to be careful that their comments do not contradict what they have written previously if they write more than a simple sentence. Where learners refer to the figures, it is important that they do this accurately. On a number of occasions, learners referred to plots 215 and 216 as 15 and 16, which is inaccurate and did not allow for marks to be awarded.

Question 4c
Many learners accessed the formula question and worked through the rule methodically. Some learners did however, forget to press the equal button on their calculator after the first operation. This led to BODMAS issues and learners did not always arrive at the correct final answer. Centres should reinforce BODMAS with learners, reinforce the use of equals to finalise operations at each stage and should also promote the use of valid checks, such as reverse calculation, particularly when working with a rule to ensure they get the answer they started with.

Question 5a
Some very pleasing responses to the mean average question. In the minority of cases, some learners chose to work with the mode, which marks could not be allocated. It was particularly pleasing to see alternative methods being used, with many learners showing a heightened awareness of mean and good full reversal of calculations down to zero to the start process of mean. Centres should be congratulated on their effective development of learning.

Question 5b
Many learners were challenged by this question. Firstly, many did not read the question accurately, with some developing routes that did not start from home and some returning home the same way that they went, which was not the most efficient route, and lost candidates' marks. Those that effectively found a route that started from home and finished at home and that read the question carefully were most successful.

Learners were particularly challenged by the time aspect of this question, with many learners not finding the time to be added from their calculated distance and speed provided.

This is a multi-stage question, requiring the learner to read the question carefully, select the appropriate maths, develop their calculations through their chosen route through the question and to interpret their application of the mathematics effectively to communicate a correct answer. Learners should be provided with lots of opportunity to work with multi stage problems in practical scenarios to apply their mathematics. This should be done particularly using time, as learners find working with time and interpreting decimal and fractional proportions of time very challenging. This is an important skill that requires consolidation before attempting assessment at level 2.

Section C

Question 6

Many learners struggled to access this question on ratio. Many missed the question entirely and chose not to attempt the question or made a start, but did not communicate an answer effectively. Learners need much more practice at using ratio to ensure success at level 2. Learners need to understand the process of adding together the composite parts, many do not access the question from this start point. Many learners have a vague understand and are able to scale up the ratio, but this strategy is not always effective, particularly where the ratio is at a polar scale or it is not in a convenient multiple for repeat scaling.

Question 7a

Many learners accessed this question by effectively reading from the table and with some accuracy, which was pleasing. Many learners added the correct total of hours and were able to combine this with the hourly rate of pay to find the total pay. Learners lost marks by not displaying their final answer in pounds and many missed the check altogether. Learners could have picked up valuable marks by displaying the answer in pounds and by checking their answer by alternative method, which there was many possibilities, reverse calculation of any aspect of their working or by estimating. This was a very open checking mark with many possibilities to pick up this mark, it clearly demonstrate that learners do not still understand what is required from them to check their answer.

Question 7b

Most of the learners were able to work with a quarter and communicated a correct final answer. To prepare learners for level 2, centres should build upon this good starting point and start to work with learners on more challenging percentages, such as 40%, 70%, 23%, 68% etc. Centres should also begin to develop checking skills for more challenging percentages and use more efficient decimal methods as an alternative to the level 1 divide by 100 method.

Question 8

Most learners struggled with this question which combined the two measure, shape and space principals of perimeter and area. This was a multi-stage problem that required learners to work in an unfamiliar context to identify whether a budget was big enough to purchase carpet and skirting board. Learners confused perimeter and area, which suggests that they are not entirely sure of the mathematics to select to answer the question. Many learners did not have consolidated knowledge of perimeter and area and may have not been adequately prepared for examination. The added dimension of not putting skirting board in the

doorways and the practical application of the unfamiliar context was not considered by many learners. Learners did however, pick up marks for understanding that they had to multiply their perimeter or area by a cost per metre or packet to find a total cost. Learners need more practice with area and perimeter in practical, unfamiliar contexts to ensure that they are prepared for examination and demonstrate functionality.

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