



Pearson

Examiners' Report

Principal Examiner Feedback

Summer 2017

Pearson Edexcel Level 1 Award
In Number and Measure (ANM10)
Paper 1A + 1B

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Edexcel Award in Number and Measure (ANM10) Principal Examiner Feedback – Level 1

Introduction

This exam paper was found to be relatively straight forward and gave a good range of marks for the award of a pass.

Although many students showed their working, a lack of working and just putting down an incorrect, although 'nearly correct', answer was the biggest cause of loss of marks. Students must realise that however simple a calculation seems, it is easy to calculate incorrectly or write down the answer wrongly and so students should avoid the risk of losing all the marks by showing no working. It is important that students use a calculator for section A in order to work out the calculations they write down, as many marks are lost unnecessarily by poor arithmetic.

Students continue to mix up methods, especially between area and perimeter and also the volume of a cuboid, where many students find the surface area or the total length of the edges.

Students must read questions very carefully and remember that, for instance, in a shopping bill, the answer may not always be found by adding one of each of the figures given in the question.

Students find it very hard to convert between measures in the metric system and more practice on this topic would be desirable.

Reports on Individual Questions

Section A

Question 1

The majority of students did well on this question, many gaining full marks. Mistakes made included not realising that the numbers given as answers had to come from the list, thinking that 9 was a prime number and subtracting numbers to give an answer of 22, rather than adding them to give a sum of 22

Question 2

Many students did well on this question, especially parts (a) – (c) requiring the use of a calculator and also part (e) requiring students to write a number given as digits in words. Rounding 14.27 to the nearest whole number caused problems for some students, with 14.3 and 15 often seen as incorrect answers. Some students also found it difficult to write 40% as a decimal, with fractions and numbers such as 40.0 regularly seen.

Question 3

The vast majority of students could write down the number shown on the scale, with just a few incorrect answers of 82, where students thought that one interval was one unit rather than two. There was a very large degree of success on marking the scale with an arrow for 267 on a scale that had one unit for each interval.

Question 4

Most students could use the calendar to get the 29th August as a Monday – but there were still students who give the incorrect answer and surprisingly did not use the calendar to write in dates.

In part (b), some students found it challenging to find the date two weeks earlier and some chose to give the date two weeks later, so that 24th August was a date frequently seen, presumably because these students had August in their minds from the given calendar – 1 mark was awarded in this case for the 24th. Some students clearly get mixed up with the numbers of days in months and used 30 days for July, giving an answer of 23rd July; again this was awarded 1 mark. Some students lost marks due to not writing enough information, eg giving 'Sunday' or 'Sunday 24th' as the answer. Another common misconception was to count the 7th itself when counting back and then reaching 25th July as a result.

Question 5

Those students who were confident with percentages generally showed a correct method and answer. A common misconception was to divide by 4 to find 4%. A few students increased £850 by 4% and were awarded a method mark. Some students were very keen on the method of finding 10% of a number and then halving to get 5% but then they got lost as they could not see how to get 4%

Question 6

There was a pleasing number of correct solutions for this 'shopping bill and change' question, that is typical of those set on Number and Measure level 1 papers. Those students who did not gain full marks were often able to pick up a method mark for showing $2 \times 59p$ or $3 \times 27p$. Common mistakes were to just give the total of the bill and forget to work out the change; 2 marks were awarded in this case. Some students gave answers which were far greater than the £10 Emma started with because they failed to write 81p as £0.81 or £1.18 as 118 but they did not seem to realise that this was impossible. Other students subtracted 10p or divided by 10 in an attempt to find the change. Some students failed to realise that Emma bought 2 pens and 3 pencils and only costed for 1 of each item; in this case students were awarded a special case of 2 marks.

Advice for students would be to read the question very carefully and to show all working.

Question 7

The majority of students gained full marks on this question requiring an understanding of negative numbers. Those who were unable to gain full marks usually put answers of -10 for part (b), ie doing the sum $-3 - 7$ rather than $-3 + 7$ and 3 for part (c), not realising the answer was -3

Question 8

This question on time was done reasonably well, but many students only gained 1 mark rather than 2 for part (a) because they gave an incomplete time, ie 4.15 rather than 4.15 pm or 16:15. Perhaps these students failed to read the sentence under the clock face. A few students read the clock hands the wrong way round and gave the answer as 3.20.

For part (b) it was surprising how many students think there are 100 minutes in an hour and gave the answer as 2 hours 5 minutes. Those who divided by 60 often gave the answer as 3 hours 41 minutes or 3 hours 42 minutes; a method mark was awarded for dividing by 60. A method mark was also awarded for seeing a build-up method of adding 60s to at least 180.

Question 9

This question was generally well done and it was pleasing to see most students giving a response that suggested they had a protractor and a ruler.

Part (b) was not done as well as part (a) with the incorrect answer of $180^\circ - 35^\circ$ or 145° rather than 35° ; these students clearly reading their protractor the wrong way round.

Question 10

This question was poorly done and many zeros were scored for adding the lengths of the given sides to give the common incorrect answer of 35. Some students just multiplied all the given sides together. Of those scoring marks, students who divided up the shape or filled in the shape appropriately or put in missing measurements correctly were awarded a method mark. Some students then found the area of at least one appropriate rectangle and were awarded another method mark.

Unfortunately many students stopped scoring at 2 marks as they used the two rectangles 4×15 and 10×6 and even though they had shown the division in the diagram, failed to realise that they had doubled up on one part of the area of the garden.

Question 11

This question was very well done. The least well done part was part (c) where it was quite common to see 'Elaine' as the answer – Elaine was the one who 'scored the greatest number of goals', rather than the one who 'let in the greatest number of goals' – the required answer.

Question 12

Many correct answers were seen for part (a) but a few students gave the correct values with no units; these answers were awarded 1 mark. Several students missed the subtraction sign and added all 3 values; if this was done correctly with the correct units a special case of 1 mark was awarded. Many students did not know that 3 km is 3000 m and conversions such as 3 km 450 m = 453 m or 3 km 450 m = 750 m were seen. It was not uncommon to see students finding the product of the km figure and the m figure and then adding the results ie $3 \times 450 + 2 \times 650 + 1 \times 700$

Parts (b) and (c) were poorly done with many students having little idea about conversion of units in the metric system. Changing mm to cm was familiar to more students than was changing litres into millilitres.

Question 13

This question was done well by many students, with a number of students getting full marks. But students also did various incorrect things, such as adding together the lengths of the three given sides, finding the sum of all the edges of the cuboid and finding the surface area of the cuboid.

Question 14

Most students found the 'bar chart' question very accessible with several gaining full marks.

A common mistake in part (c) was to give an answer of 8 which was the top value on the frequency axis. Also in part (c) some students had clearly added the 5 frequencies together but made a mistake; with no working this gained no marks, but when the correct addition sum was seen a method mark was awarded.

Question 15

For those who have been well-rehearsed in this type of question, students followed a correct method and gained 4 marks. A few students gained the correct final figure but failed to give the units and so forfeited the final mark. Unfortunately, many students find this type of question very challenging and many mistakes were seen. Frequently students added the readings rather than subtracting them to find the number of units used. Many students stopped once they had found the cost of the units used and forgot to add on the monthly charge. Other students did sums of all types with the various numbers that were found in the 'gas bill' = the dates 31st and 1st were used as well as 52 weeks, 24 hours and 12 months. Many students gave incorrect answers without showing any method at all and so gained no credit at all.

Section B

Question 1

There was a mixed response for this question on basic number skills. Many correct responses to part (a) were seen but also many incorrect responses were seen. Those responses with just one error, as long as evidence of carrying figures was seen, were awarded a method mark. Many students made the mistake of adding $6 + 6 + 9$ and getting 21 but instead of writing 1 in the units column they wrote 2 and carried the 1 to the tens column.

In part (b) several correct answers were seen and many students gained a method mark for a correct process seen with a mistake or a 'box' method with just one mistake. Unfortunately there were also a number of students who showed little understanding of what to do and so gained no marks.

Part (c) was rather puzzling for many students who did not realise the need to divide 216 by 6. Those who did still struggled with the arithmetic in some cases.

In part (d) several correct responses leading to the correct answer were seen. Students either arrived at the correct answer by the traditional method of lining up the digits underneath each other or by using an adding on method. It seemed that because the question was set in a 'money' context, the adding on method was seen more frequently than if the demand was just to subtract numbers with no attachment to money. Showing that the number ended with $_.28$ generally gained a method mark unless there was a contradiction.

Question 2

Most students could correctly order integers and percentages, but the problem came with arranging decimals; 4.2 was often seen before 4.19 in an ascending list.

Question 3

Many students were able to score full marks on this question, but there were some students who did not know their times-tables and $54 \div 9$ had a variety of incorrect answers. Some students wrote 768 to the nearest hundred as 770 rather than 800

Question 4

In general, students do not feel confident with fractions and very few students were able to gain many marks for this 4 part question.

The smallest fraction was often given as $\frac{1}{2}$ rather than $\frac{1}{4}$, perhaps because the denominator was the smallest number in the list. The equivalent fractions were often given as $\frac{12}{20}$ and $\frac{20}{25}$, perhaps because they both contained the number 20. There were also many other combinations that seemed illogical. Some students knew that $\frac{3}{4}$ was 0.75 when written as a decimal but other students gave incorrect answers such as 3.4

Question 5

Most students gained the correct answer for the subtraction of fractions with the same denominator.

In part (b), finding 30% of £210 was quite well done, many students finding 10% and then multiplying by 3. Those students that showed correct working but were not able to do a correct calculation were able to benefit from a method mark, but unfortunately some students failed to show adequate working even for this.

Question 6

Many students were unable to give the correct answer of C or 50p, with many apparent guesses. Successful students used a rounding approach, such as, in this case, $£4 \div 8$ instead of trying to do $£3.80 \div 8$

Question 7

Many students found finding a time difference quite straightforward, but others got into quite a muddle, having to go from 08 40 to 09 26, passing through 09 00. Those students that showed a good method often wrote out 08 40 and then 09 00 with 20 minutes and then 09 00 to 09 26 with 26 minutes. A few students subtracted the given times and inevitably got an incorrect answer and no method marks.

The majority of students were able to pick out the correct time of the latest bus that Molly could catch for part (b).

Question 8

Many students were able to find the perimeter correctly, although adding the numbers was often challenging but with correct working a method mark was gained. Students do need to be persuaded to show working even for quite straightforward sums since, if $11 + 7 + 11 + 7 = 35$ was seen, M1A0 was awarded but an answer of 35 with no working got M0A0. Both of these responses were frequently seen. The most common incorrect response was finding the area rather than the perimeter.

Question 9

In part (a) most students were able to gain a mark for knowing that an answer linked to capacity in metric was required – litres, millilitres or centilitres.

For part (b), the majority of students gave the answer of cm, gaining no marks as an imperial unit was required; clearly 'imperial units' was a term not understood.

Summary

Based on their performance on this paper, students are offered the following advice:

- show clear working in order to maximise mark potential
- revise 'time' carefully by learning units of time, particularly that there are 60 seconds in a minute and 60 minutes in an hour, am and pm notation and the number of days in each month of the year
- learn conversions between metric units of length, weight and capacity
- learn the difference between the calculations needed for area and for perimeter as these are frequently mixed up
- know how to calculate the volume of a cuboid as distinct from the surface area or the total length of the edges
- ensure that a protractor is read correctly when measuring the size of an angle
- practice extensively on household finance bills of various types

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:

<http://www.edexcel.com/iwantto/Pages/grade-boundaries.aspx>

