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# Examiners' Report Principal Examiner Feedback

## Summer 2018

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 accessible to many and gave a good range of marks for the award of a pass.

A lot of marks were lost unnecessarily because of errors in basic addition and subtraction on paper 1A, the calculator section.

Students continue to mix up methods, especially for area and perimeter of a rectangle. For the volume of a cuboid incorrect methods included finding the total length of the given edges or all edges or the surface area.

Students must read questions carefully so that they give the answer that is required.

Students must make sure they bring mathematical equipment to the examination and use it correctly as there was evidence that some were unable to measure the length of a line or draw an angle because of this.

#### **Report on Individual Questions**

##### **Section A**

##### **Question 1**

Nearly all students were able to correctly identify 27 as the multiple of 9 in part (a).

Although there were 3 choices for a prime number in part (b), many students were unable to give a correct answer. Part (c), asking for a common factor of 14 and 28 was not well done; it seemed that the term 'common factor' was unknown to many.

##### **Question 2**

We saw an improvement in the ability of students to add and subtract metric units of measure in part (a) which was pleasing. There are still some students who do not know how many grams are in a kilogram, with 100 being commonly used. Some students think they can add the kilograms and grams together and, eg gave  $3\text{kg } 400\text{g} = 403\text{g}$  while others added correctly to give  $5\text{kg } 600\text{g}$  but gave a final answer of  $605\text{g}$  or  $605\text{kg}$ . Carelessness in reading the question meant that some who could manage the units got the incorrect answer of  $10\text{kg } 500\text{g}$  because they added the three lengths; B1 was awarded. Several managed the calculation only to omit the units, losing the final mark.

For part (b), many students could correctly change 7400 centimetres to metres, but a range of incorrect answers were seen where students either did not know they needed to divide by 100 and commonly used 10 or 1000; some students also multiplied by multiples of 10.

### **Question 3**

Many students did well on all three parts of this question requiring the use of a calculator to do some calculations. The only mistakes appeared to be misreading and writing the answer from their calculator incorrectly.

### **Question 4**

This 'shopping bill' and change question was well answered by several students, who in many cases showed their working or gained correct results. Some gave an answer close to the correct one but with no working or a few odd figures on the page, so we could not award any marks as there was no evidence of correct working; it must be stressed to students that for any questions with more than one mark they are running a risk of gaining no marks if they make a slight error and have not shown any working. A handful of students did not read the question thoroughly enough and made careless mistakes such as working out the cost of 3 buttons rather than 4 or forgetting to work out the change after finding the total cost.

### **Question 5**

For part (a) all but a very few students were able to state that the 26<sup>th</sup> February was a Monday and so gain the mark.

Part (b) was also quite well done, although some students didn't read the question carefully enough and added on 2 weeks rather than going back 2 weeks. Some students were too vague with the date and for example, 'Monday' was awarded no marks. 22<sup>nd</sup> alone was still vague, but was awarded M1.

### **Question 6**

Part (a) was poorly done with several wrong answers such as 4.5 or 0.4 for  $\frac{4}{5}$  as a decimal rather than 0.8.

Part (b) was generally well answered with many students picking up a method mark for dividing 720 by 8 or  $3 \times 720$  if they did not gain full marks. A common misconception was dividing by the numerator and multiplying by the denominator.

We saw many correct answers for part (c) and this time we saw few students increasing or decreasing 540 by 30% suggesting the question was read carefully. In part (d) we found many students failing to be able to write 634 to the nearest 100, with answers such as 630 or 700 commonly seen.

Part (e) asking for 6.47 written to one decimal place, was also poorly done. Many students moved the decimal point or truncated the answer.

### **Question 7**

In this question asking for 65 days to be written as a number of weeks and days, students were very good at identifying 9 weeks, but the number of days was often incorrect. Interpreting 9.2857 as meaning 9 weeks and 3 days to the nearest day was commonly seen. Another misconception was that 1 month is 4 weeks which equals 30 or 31 days and so 65 days was 8 weeks and a number of days.

### **Question 8**

Part (a) was often correct but mistakes were made when students added two or more distances together. For part (b) we saw many students picking up a method mark for using two correct distances but they were often unable to give and add three correct values correctly, the most common values given instead of  $72 + 89 + 140$  were  $72 + 89 + 72$  and  $72 + 89 + 156$ ; the distance for the last leg of the journey causing the problem.

### **Question 9**

This question on drawing a bar chart was very straightforward for the majority of students. A few responses were left completely blank. Most errors that we saw seemed to be careless drawing of heights or forgetting the labels of the vehicles. Part (b) was almost always correct.

### **Question 10**

For part (a), showing the time on an analogue clock was a challenge for many students, with 1 out of 2 being the most common mark. The mark was almost invariably for the minute hand being correctly on the 9. Common misconceptions were drawing the hour hand exactly on the 2 rather than between the 1 and 2 or for drawing the hands the same length.

In part (b) we saw far fewer students mistakenly thinking there are 100 minutes in an hour than in previous exam series. The most common mistake was using the wrong start time, but if 1 hour 15 minutes was clearly added on, using 60 minutes in an hour, M1 was awarded. We felt that a lack of working cost many students, who thought this was an easy question, a valuable method mark.

### **Question 11**

This question involving reading information from a table was generally well done with the majority of students gaining at least 2 marks out of 3. The most poorly done part was (a) requiring students to identify the breed of hen with the smallest average weight - the full range of incorrect answers were seen, showing students found identifying the size of a decimal very difficult.

### **Question 12**

Many students were able to correctly calculate the volume of this cuboid, but a significant number added the dimensions together instead of multiplying them.

### **Question 13**

Finding the cost of a unit item to the nearest penny was not as straightforward to all students as we felt it might be. Most did a division sum, but for some, it was done the wrong way round. Those who showed the correct calculation gained a method mark but often failed to gain the accuracy mark as they gave an answer of 0.14 or 10p.

### **Question 14**

Area and perimeter are still being confused by several students, and the majority of incorrect answers involved finding the perimeter of the shape or of the two separate rectangles. Another incorrect answer was 360 found by finding the two separate areas of 30 and 12 and then multiplying them together; this was awarded M1 for a correct area. Some students did not show the separate areas but went straight to the calculation  $10 \times 3 \times 4 \times 3 = 360$  and gained no marks.

### **Question 15**

Although this was a familiar topic, for the bill question a significant number of students struggled with knowing what to do with the numbers. Some found the number of calls and texts above the number of free ones, but then went on to divide by the 5p and 10p costs. Others added instead of subtracting and some multiplied everything together. A common error when finding the cost of the calls was using 0.5 instead of 0.05 for 5p. It was not unusual for some almost correct responses to use the incorrect value of £20 instead of £19.99 for the monthly charge; such a response gained 2 marks as the method was not fully correct. Some students gave completely unrealistic answers and even negative values were seen; it should be noted that when writing papers, we try to use figures that are realistic for costs.



## Section B

### Question 1

(a) We saw many good responses with most students setting out the 'sum' in a traditional fashion, most of these scored at least one mark, either for finding a units digit of 7 with a correct carry of 1, or for a response with just one error. A few aligned the numbers to the left finding  $5176 + 2130 + 3800$ . Some tried to break the addition into sections such as  $(5100 + 200) + (76 + 13 + 30) + 8$ , but this often went awry because they omitted the contribution from one of the digits or included it twice.

In part (b), the traditional formal method was most often seen and frequently correct. The second most common response was to partition as  $5 \times 900$ ,  $5 \times 50$  and  $5 \times 3$  scoring a mark so long as two of these were performed correctly.

Part (c) was the least popular of the three sections from question 1 with fewer attempting the traditional approach. The attempts to count on in 6's often contained more than one step error, so scoring zero; it was not uncommon for the number of sixes to be miscounted.

### Question 2

We saw a good number of correct answers for this estimation question, but also the full range of other options as incorrect answers. It is a shame that many students did the exact sum and then choose the value nearest to this for their answer; this is not the intended method and students should be shown the basic principles of estimation using one significant figure.

### Question 3

For part (a) many students were able to correctly calculate  $8 \times 7$  but we also saw numbers close to 56 such as 55 or 58. Some students listed the multiples of 7 but miscounted, giving the answer 49 or 63.

Part (b) was almost always correct with any incorrect answers generally having an extra zero.

Part (c) was particularly well done with only a very small amount of students gaining no marks.

For part (d), few students knew the value of the 8 in 7.85 with many thinking it was 80; we also saw many blank responses.

#### **Question 4**

We saw many responses that were correct answers for part (a). A few started measuring at 1 cm and therefore gave an answer of 9 cm rather than 8 cm. We also saw a small number of students giving an answer of 8.5; maybe misreading the values from their ruler. The few blank responses we saw suggested a student without a ruler.

Part (b), drawing an angle of  $50^\circ$ , was less well done than part (a). There were a number of angles measuring  $130^\circ$  or  $150^\circ$ , where students were having a problem using their protractor correctly. Students were awarded the mark for a  $50^\circ$  angle anywhere along the line; generally this was either end. A few students showed two angles in the middle of the line which was satisfactory as long as we knew which of the angles they thought was  $50^\circ$  - without any indication we did not know which angle we were marking and therefore had a choice which scored zero. It is best if students draw the line from the stated place, but if not, they should indicate the angle they have measured. Again, a null response made us assume that it was likely the student was without a protractor.

#### **Question 5**

This question on using a number line to calculate integer sums was very well done and we saw very few mistakes.

#### **Question 6**

Ordering percentages, in part (b) was almost always correct but parts (a) and (c) had a mixed response. Ordering decimals often causes problems and although there were some correct answers, a good number interpreted 0.61, 0.5, 0.67, 0.6, 0.59 as 61, 5, 67, 6 and 59 respectively and so gave an incorrect answer.

Part (c) was more often correct than part (a) but many students wrongly assumed that any amount given in pence must be smaller than an amount given in pounds, so they put 370p and 482p before £2.25 in order of size and gained no marks.

#### **Question 7**

We saw a good response for recognising the metric unit that could be used for weight and capacity, and the imperial unit that could be used for length. The most common mistake in this question was to state the imperial unit that can be used to give the distance from London to Brighton as kilometres.

### Question 8

Across both parts (a) and (c) of the level 1 paper, this was the least well done question. 70% as a fraction was often correct with the answer of  $\frac{70}{100}$  or  $\frac{7}{10}$  seen in more or less equal amounts. However we also saw  $\frac{1}{7}$  or  $\frac{1}{70}$  and a few other incorrect fractions.

For part (b) there were some who could correctly write the fraction in simplest form, but many stopped at  $\frac{8}{12}$  or did not know what was required.

Part (c) gained the best response across the whole question with many being able to add  $\frac{2}{7} + \frac{3}{7}$  correctly. It is probably not surprising that the most common incorrect answer was  $\frac{5}{14}$ . Most students could not choose the largest fraction from the given list, most incorrectly choosing  $\frac{3}{10}$ , the fraction with the largest numerator and denominator. Several students believed that the equivalent fractions were those with the same denominator and so gained no marks for part (d)(ii).

### Question 9

Most students were able to correctly read the two integer scales and give the correct answers for both parts of the question. A small number got (b) incorrect as they failed to realise the scale was going up in 2's and so gave the answer 63 or 68 instead of 66.

### Question 10

Most students who knew what to do to find the perimeter were able to gain 1 or 2 marks. Unfortunately a lot gave the frequently occurring answer of 55 as they had found the area rather than the perimeter. Incorrect adding, with a correct method was frequently seen and was awarded a method mark. Those students who showed no working but an answer of 31 or 33 or similar, probably could have picked up a method mark had they shown us how they arrived at their incorrect answer.

## Summary

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

- Read questions very carefully.
- Use the calculator when allowed to do so, i.e. on section A.
- Show all working clearly even on the calculator section.
- Learn conversions between metric units of length, weight and capacity.
- Learn the calculations needed for area, perimeter and volume, and know not to get them mixed up.
- Spend more time revising fractions and decimals.

## **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>





