edexcel

Principal Examiner Feedback

Summer 2013

Edexcel Level 2 Award (ANM20)
Number and Measure
Paper 2A + 2B

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Introduction

Section A is a calculator paper. It was evident from some work that candidates were attempting the paper without the aid of a calculator. This is not advisable, since calculation errors will cost marks. Generally the standard of work on this paper was encouraging, particularly the amount of working out that candidates showed. Candidates need to take particular care with their numbers. There was some evidence in this paper that candidates were putting numbers into calculators incorrectly, or copying numbers from calculator displays incorrectly. Equally it was not uncommon to see candidates mis-copying answers from working space onto answer lines.

Reports on Individual Questions

Section A

Question 1

Usually well answered. The only common error was in reversing the signs.

Question 2

Those without calculators were unable to complete this question. This was a relatively easy question but spoilt by some candidates who persist in rounding off answers on a calculator.

Question 3

Many provided the correct answers, but a significant minority divided 63 by both 3 and 4 to obtain incorrect numbers. Some showed $63 \div 7 (=9)$ but were then unsure as to how they might proceed.

Question 4

There was much confusion with this question, with many candidates mixing up processes for finding the area with the perimeter (and vice versa) but also some using the same process in both parts. In part (b) many forgot to divide by 2. The arithmetic was usually performed correctly.

Question 5

There were many correct solutions to this question. Most candidates knew they had to multiply by the exchange rate.

Question 6

Part (a) was well answered. In part (b) most gave the correct answer, but some calculated 4×5 and some 4^6. In part (c) it was again the case that some spoilt their answers by undertaking some rounding.

Question 7

This question was usually well answered. A few candidates halved their answer.

Question 8

There was quite a lot of confusion about this question. Even though this question was on the calculator section there was a preponderance of non-calculator methods shown, usually with candidates working out 10%, 5%, then subtracting a nominal amount in an attempt to find 4%. A significant number of candidates added their amount found back onto 300, thereby giving an incorrect answer, having stated the final amount rather than the percentage alone.

Question 9

There were many correct solutions to this question. Most candidates knew they had to multiply by the conversion.

Question 10

It was surprising to find so many who were totally confused by this question. There were many attempts to write as a fraction, as a percentage, to change figures into decimals, and to write as a unitary ratio. The inclusion of the number 30 was certainly an unwelcome distracter for many. Frequently 14:16 (for 1 mark) was seen but then candidates went on to change this ratio in many different ways. 7:8 was eventually obtained by some.

Question 11

Most candidates had a good idea of what was required in this question, but some then used the wrong order of operations. There was also some confusion as to whether they should use 2.50 or 2.75 in multiplying various quantities. 30×2.50 was always a good starting point. But many were unable to understand the 2.75 had to be used for the extra 15. As a result there were many 15×2.50, 45×2.50, 45×2.75 and other combinations of numbers. Most realised they had to deduct 23.20, but some added this on. But overall this was a well answered question.

Question 12

Only a minority of candidates produced an accurate pie chart. Some provided the correct angles in the table, but were then unable to produce an accurate pie chart (no protractor?). Those who did not understand merely drew three sectors of approximately the same size. Not all candidates labelled their sectors.

Question 13

As division by fractions is on the calculator section candidates have the choice of working out the solution by traditional fraction methods, or conversion to decimals and use of a calculator (there was no evidence of candidates using fraction functions on scientific calculators). Those using traditional methods failed to convert to a top-heavy fraction and usually failed to invert the second fraction; inversion of both was more common. Traditional methods rarely attracted any marks. Those trying a calculator method regularly wrote the first fraction as 8.1 rather than 8.2, but there were many correct answers from those using 8.2 and 2.5.

There were many candidates who were able to calculate the area of one of the rectangles. Far fewer took the next step of calculating both rectangles and attempting a subtraction.

Question 14

There were far too many trying to find out the LCM, by writing out multiples of 60 and 75. Of those trying to find the HCF the majority of candidates chose to use factor trees rather than writing out the factors of the number. But in so doing few gained full marks, and evidence appeared to suggest that some were writing out factors not to find the HCF, but the LCM instead, and indeed there were many answers which reflected this.

Question 15

There were inevitably those who chose to use the formula for circumference instead of area. There were some who used 6 cm as the radius rather than the 3 cm that was given. Those candidates who performed the correct calculation gave their answers to a good degree of accuracy and gained full marks as a result. Very few candidates gave the units with their answer, thereby missing out on the mark awarded for correct units.

Question 16

There were many candidates who were able to calculate the area of one of the rectangles. Far fewer took the next step of calculating both rectangles and attempting a subtraction. There were too many attempts to add the dimensions.

Question 17

There were few candidates who gained full marks in this question. Some stated 10% as 5, but could not then equate this to the increase. Some found the difference (increase) as 5, but again did not know what to do with this. There were various combinations of the numbers 5, 50, 55 and 100 in almost random calculations.

Question 18

Few could remember the correct formula for calculating the volume of a cylinder. Common errors include using 8 as the radius, attempting to find the surface area, or using incorrect formulae such as $\pi^2 rh$ or $2\pi rh$. Many stated the correct formula but then calculated 5^2 as 10. But it was encouraging to see a sizeable minority getting through all this to give an answer within the acceptable range.

Section B

Question 1

Part (a) was well answered, but in part (b) there were a significant number of candidates who failed to round off to 2 decimal places correctly.

Question 2

Part (a) was well answered, and the only errors in part (b) occurred when candidates mis-counted (giving either 1.5 or 1.7) or gave the answer as 16.

Question 3

Generally well done. The only major issue was with choosing the correct sign to go with a numerical answer.

Question 4

A range of methods were seen employed in answering this question. Some equated 80/200 with 40/100 and thence to 40%, whilst some wrote 10% as 5 and thence to 40%. Some wrote 80/200 × 100 but this was then calculated poorly. Some wrote 80/200 and then a series of equivalent fractions, which included 40/100 but they failed to realise this was the answer. Many still got full marks.

Question 5

In part (a) there were many guesses at the answer without any supportive working. It was surprising the number of candidates who could not work out a fraction of a quantity, with many attempts to convert to a percentage first, and then find it as a percentage of a quantity by long and circuitous routes, usually incomplete. Finding ¼ of 80 was usually stated as 20; finding 1/3 of 45 candidates found far more difficult, and frequently candidates left this uncalculated. In part (b) there were many examples of 20/100 being written, but many could not simplify this as far as 1/5; 10/50 or 5/25 were common answers. Some chose to write their working using decimals or percentages instead of fractions.

Question 6

A well answered question. The only errors were related to poor arithmetic, or a failure to state the answer correctly. Weaker candidates divided by 5 instead of 6.

Question 7

Many chose to round off the numbers to 1 significant figure, though alternative forms of rounding to produce an estimate were also acceptable. Those candidates who attempted to work out the answer accurately with the numbers given found themselves unable to, and gained no credit since it was clear that some form of estimation was required. Many recognised that using 29 or 30 were possible, and both of these produced an acceptable estimate. However, rounding 7.8 to 10 or 0.49 to 1 would not produce a suitable approximation.

Question 8

Candidates struggled with some accepted procedures in this question. Many gained methods marks for demonstrating a partial technique, but few were able to present a complete method through to a correct answer. Actual arithmetic appeared good. A range of techniques and method were seen, including grids, partitioning, tables, alongside more traditional methods. Common errors related to mis-placed decimal points, both in working and in respect of the final answer.

Question 9

Fractions rarely done well. In part (a) there were some good attempts to use common denominators. A significant number took a first step of writing the fractions in their vulgar form, which gave them much larger numbers to use. Some went on to add the fractions rather than subtract. In part (b) methods were again confused. Still attempts to use vulgar fractions, but again a significant minority attempting to convert into equivalent fractions with the same denominator, before then attempting a division (or multiplication). Many inverted both fractions, or failed to invert at all. Many failed to simplify the result of their calculations, in either part.

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