AQA

ASSESSMENT and
QUALIFICATIONS
ALLIANCE

General Certificate of Secondary Education

Mathematics 4301

Specification A

Paper 2 Foundation

Examiners' Report

2008 examination – June series

Specification A

Paper 2: Foundation Tier

General

This is the first assessment of the two tier specification. Overall the paper was accessible with many high scores and the standard of presentation was usually good, but many candidates lost marks by not showing any method for many questions just their incorrect answer. For questions with drawings, rulers were usually used appropriately rather than freehand diagrams leading to greater accuracy. In number questions solutions usually included sufficient digits although some candidates truncated answers rather than rounding.

Topics that were done well included:

- coordinates
- lines of symmetry
- formula in words
- pictogram
- exchange rates
- travel graph
- frequency polygon.

Topics which candidates found difficult included:

- three dimensional shapes
- postage tables
- area of cuboid
- height of cuboid
- transformations
- setting up equations.

Question 1

Many candidates scored two marks as the last answer was a follow through from adding their two previous answers. Common errors were 1.4 instead of 1.04 and 1.6 instead of 1.60, and some used $1 \, \text{kg}$ or $2 \, \text{kg}$ instead of $\frac{1}{2}$ kg of grapes.

Question 2

Many candidates gave a fraction for part (a) instead of a percentage, but most gave a percentage for part (b).

Common errors were answers of 2% and then 8% or $\frac{2}{10}$ and then $\frac{8}{10}$. Many scored the mark for part (b) on follow through as 100 – their answer to part (a).

Question 3

In part (a) many candidates did not show the hidden edges and other errors were to draw a net or a triangular based pyramid.

More got the cuboid correct than got the triangular prism correct in part (b).

Errors were rectangle and oblong or triangle, trapezium, and rhombus.

Question 4

Part (a) was rarely wrong but errors were to have 4 squares on the second row and 3 on the top row or to have the extra square on the left hand end of the top row rather than the right hand end.

Part (b) was also rarely wrong but occasional errors were to have totals of 9 or 13.

Question 5

In part (a) the usual error was to give *A* as (1, 3) and *B* as (3, 4).

Many candidates were confused by the negative values, in part (b) and *C* was often at (–1, –1) and *D* at (–1, –2) or (1, –2). In part (c) many drew extra points to create a shape with *C* and *D* but not using *A* and *B*. Some candidates stated their shape was a parallelogram when it was not, or did not join up the points *ABCD*.

Question 6

Many candidates had not worked with this type of data before so $86\,p$ from $64 + \frac{1}{2} \times 44$ was a common answer for part (a).

In part (b) many did $1.02 + 1.91$ or added on another $2\,p$ or $4\,p$ for the extra 2 grams.

In part (c) many got $150\,p$ from $3 \times (44 + 6)$

Question 7

Some candidates got the answers to parts (a) and (b) mixed up. Common errors in part (a) were answers of 11 and 22.

In part (b) 11 and 6 were also common answers and other errors were $3 \times 3 \times 2 \times 2 = 36$ or $3 + 3 + 2 + 2 = 10$

Question 8

Part (a) was rarely wrong but occasionally two lines were drawn on each shape in random places.

In part (b) the usual error was to place the square so that the resultant shape had a line of symmetry rather than any rotational symmetry.

Question 9

Most candidates got part (a) correct with errors being answers of 165 (from part (b)) or 390 from 6×65.

In part (b) common answers were 6 (from part (a)), 2.5 from $165 \div 65$ and Trial and Improvement answers of 3 or 4.

Question 10

This was done well. In part (a) some candidates misread the scale and gave 4, or 40 or 4000 and then similarly in part (b) they gave 1.5, 15 or 1.

In part (c) some did not do a subtraction and gave 700 or 400 or 7 or 4 or 3.

Some candidates attempted to draw 300 circles in part (d) and other rare errors were 2 circles or $\frac{3}{4}$ of a circle.

Question 11

Most candidates used the correct digits and the usual error was to have the '1' correct but the '4' and '2' interchanged. Occasionally the number '7' occurred usually instead of the '1'

Question 12

The majority of candidates got to 188 but many gave that as the answer and 173.8 was common from incorrect use of the calculator when no brackets are used. Other answers were 27 (mode) or 28 (range) or 31, or 34, or 38 as the median.

Question 13

In part (a) some candidates gave 326 or 3.26.

In part (b)(i) the decimal point occurred at random with 29.3 a common answer. Many candidates got parts (b)(ii) and (b)(iii) the wrong way around and other answers for part (b)(i) were 29 and 293. Part (b)(iii) often had 29 as the answer.

Question 14

Most got part (a) correct but 19 and 68 + 711 = 779 were seen.

In part (b) many solved for 'Q' rather than '7Q' with answers of 14, or 28 from 38 – 6 – 4, and 42 from 38 + 4.

A majority of candidates got '5a' in part (c) but with '–6b'' or '10b'. Some missed out the '+' sign and so lost a mark, whilst others did incorrect further working such as $5a + 6b = 11ab$ for which they lost a mark.

Question 15

Most candidates got this wrong with 20 being the common answer. The majority did not show any working and guessed at values of 3 or 4 or 55 from 75 – 20.

Question 16

Most candidates got the two-way table correct with the usual error being the first entry of '1' being replaced by '2' or '0'. A few added the numbers together.

In part (b) many did not include the '1' as an odd number so $\frac{3}{16}$ was a common answer. Other answers were '12 even and 4 odd so $\frac{1}{3}$ ' and some used incorrect notation such as '4 out of 16' for 1 mark and '4:16' which scored no marks.

Question 17

Most candidates scored two marks in part (a) as there were many errors in attempting to subtract the two readings but then most knew to multiply by 104 but £51 was a common answer. Some added the readings.

The majority of candidates knew what to do in part (b) but those who used a 'build up' method to get to 97% always made arithmetical errors. A few did 62 ÷ 0.97 or 97 – 62.

In part (c) most got '5' from 39 – 34 but then used it incorrectly as in 5 × 1.04, 34 ÷ 5 or 5 ÷ 39.

Question 18

Part (a) was correct more often than part (b).

In part (a) common answers were 267 from 500 ÷ 1.87, 587, 501.87 or a guess of 900.

In part (b) common answers were 374 from 200 × 1.87 and guesses of 110 or 100.

Question 19

Most got angle *B* as 70° but then assumed that angle *E* was the same. Some used angles in a quadrilateral with *B* = *E* and so got 75° from (360° – 90° – 120°) ÷ 2. Many did not understand the notation *BED* and having got 70° and 80° gave 270° as their final answer from 70° + 80° + 120° thus losing a mark.

Question 20

A majority of candidates got parts (a) and (b) correct but part (c) was found to be much harder.

Rare errors in part (a) were answers of 149, 160 or 1500.

In part (b) answers of 2, 5, 15, 20 or 30 were seen.

In part (c) most candidates used 150 but divided by such numbers as 4, 10 from part (b), 180 minutes, or 170 minutes The incorrect use of the 10 minutes led to an answer of 60 from 150 ÷ 2.50.

Question 21

Most candidates gave Beryl as the answer but often with no working or incorrect working such as 580 – 51 and 370 – 32 or 580 × 51 and 370 × 32. A few got the answers of 580 ÷ 51 = 11.37 and 370 ÷ 32 = 11.56 but then gave 'Alice' as their answer. A small number of candidates did 51 ÷ 580 and 32 ÷ 370 but usually scored no marks as they failed to state that they were now working in litres per kilometre.

Question 22

This question was poorly answered. Many candidates failed to give a single transformation and often gave rotation but then added a translation. The word 'turn' was not allowed and although the sense of the rotation was not needed many gave '90° clockwise' for which they lost a mark. Most failed to give the centre of the rotation.

In part (b) the majority of candidates reflected shape B in the x axis or in $y = -\frac{1}{2}$ which scored no marks.

Question 23

Part (a) was well answered with errors being answers of 200, 97 or 45.

Most candidates gave 60 or 50 as the answer in part (b)(i). In part (b)(ii) the majority gave 64, but often incorrectly as $\frac{64}{140}$, $\frac{1}{64}$ or $\frac{64}{92}$, and some used incorrect notation such as '64 out of 200' or '64:200'. A few just gave word answers such as 'likely' or 'possibly'.

Question 24

It was very rare to see full marks scored on this question. Many candidates got one mark for 5y but were unable to set up an equation for y. Several gave $y = 1$ with no working or from 5y = 5. Some assumed that the bottom three expressions added up to the '5' and some solved 4y – 1 = 5.

Question 25

Most candidates knew to use Pythagoras' theorem and many gave an answer of 11 which scored full marks, provided there was some working, but scored no marks if it came from a scale drawing or with no working. Other errors were guessed answers of 12 or 15, 54 from 6 × 9, or incomplete working leading to117.

Question 26

A significant number of candidates scored full marks or no marks for this question. Common answers were 85 and 85 or 100 and 70 or 170 ÷ 12 and 170 ÷ 8. A few made arithmetical errors when doing 8.5 × 12 or 8.5 × 8 but they scored one mark.

Question 27

Most candidates got part (a)(i) correct but not part (a)(ii) which was often omitted. Common answers for part (a)(i) were 124.5 or 8, and for part (a)(ii) 140.5, 26 as the median, or140<h<150.

Part (b) was well answered as the boys graph was already drawn. Some candidates plotted the points at the upper class boundary or the lower class boundary but still scored one mark. A few drew their lines inaccurately with many trying to draw a single line to connect the last three points.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on http://www.aqa.org.uk/over/stat.html page of the AQA Website.

Mark Schemes

Mark Schemes are available on http://www.aqa.org.uk/qual/gcse/newmath_a_assess.php page of the AQA Website.