Principal Examiner Feedback

November 2010

GCSE Mathematics (2381)

Higher Paper (5381H_06)

A PEARSON COMPANY

Edexcel is one of the leading examining and awarding bodies in the UK and throughout the world. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers.

Through a network of UK and overseas offices, Edexcel's centres receive the support they need to help them deliver their education and training programmes to learners.

For further information, please call our GCE line on 0844 576 0025, our GCSE team on 0844 576 0027, or visit our website at www.edexcel.com.

If you have any subject specific questions about the content of this Examiners' Report that require the help of a subject specialist, you may find our Ask The Expert email service helpful.

Ask The Expert can be accessed online at the following link:

http://www.edexcel.com/Aboutus/contact-us/

1. PRINCIPAL EXAMINER'S REPORT – FOUNDATION PAPER 6

1.1 GENERAL COMMENTS

1.1.1 The great majority of candidates entered for this paper found it accessible.

1.1.2 The vast majority of candidates attempted nearly all the questions, as blank responses were only seen in a few questions.

1.1.3 Questions 1, 2 and 3 in Section A and questions 2 and 3 in Section B were tackled with the most success.

1.1.4 The histogram on question 4 in Section A was better answered than in previous seasons. In Section B question 4 and 5 were least well answered.

1.1.5 The standard of literacy seen in 'explain' questions was very poor and it is hoped that teachers will work on this so that overall performance can be improved.

1.2 REPORT ON INDIVIDUAL QUESTIONS

1.2.1 Question A1
Question 1 was very well understood with 95% gaining full marks and a further 1% gaining 1 mark for showing correct working leading to an incorrect answer.

1.2.2 Question A2
Part (a) of this question was well understood and correctly answered by 78% of candidates whilst part (b) was less well understood with 67% of candidates gaining the mark. The mistakes that were made usually came from incorrect interpretation of the average asked for or for writing the frequency rather than the group. In part (c) answers were very mixed. About a third of candidates gained full marks for the correct answer of 34. Many candidates did find the midpoint of the group and multiplied the midpoint by the frequency and scored 2 marks. Those who then went on and divided by 30 then scored another mark. Many candidates started with mid-points (or sometimes upper or lower bounds) and attempted to multiply by frequencies (often with errors in mid-points or multiplication) and did gain credit for this approach. Candidates often divided their total by a variety of numbers, with 5 and 150 being the most common wrong ones. Some candidates often started with promise and completed the table correctly but then abandoned their attempts and chose wrong methods such as $30 \div 5$ as a new method or selected the modal class or simply gave wrong answers such as 6. Unfortunately those candidates presenting a choice of solution scored no marks.

1.2.3 Question A3

This question was well answered with only 14% of candidates scoring no marks. In part (a) candidates often tried to calculate the median rather than the interquartile range whilst in (b) they gave the number of members who weighed less than 100kg was often given.

1.2.4 Question A4

Candidates performance in drawing histograms is improving over time with 43% of candidates gaining full marks. When candidates made mistakes it was usually with the frequency density as this was often calculated the wrong way round but the most common mistake was to draw a bar chart. Candidates would also help themselves if they used an HB pencil or softer when drawing graphs.

1.2.5 Question B1

Some candidates had not realised that the key elements to this question were to have a time scale in the demand to the question and that the response boxes should contain non-overlapping but continuous sums of money that include zero and a more than box. Unfortunately only 43% of candidates gained all four marks in this type of question that is a regular visitor to these papers.

1.2.6 Question B2

The correct relationship in part (a) caused some confusion in candidate's minds as to marks going up and going down and some who gave the answer as positive without the correlation being present. The line of best fit was correctly drawn by the majority of candidates and the final reading from their graph was also well understood. The most common error seen was in the reading from the scale on the Science axis. Interestingly only 55% of candidates gained all 3 marks in this routine question.

1.2.7 Question B3

This question was very well understood with 45% of candidates gaining both marks. 21% of candidates gained one mark for showing that they understood how to work out a 4-week moving average and only 34% of candidates gained no marks.

1.2.8 Question B4

Candidates often read off the values from the box plots but did not compare them and so forfeited the marks. Many candidates lost marks because they talked about the number of girls and boys rather than using some statistical measures to compare the distributions e.g. using the word average without the word median, or spread instead of range. 28% of candidates gained both marks because they compared an individual measure as well as a measure of spread. A further 37% gained one mark for giving one of these statistical pieces of information. The remaining 35% of candidates did not gain any marks.

1.2.9 Question B5

Only 16% of candidates gained all 4 marks in this question. Many candidates misread the question and worked out the probability of taking exactly one jar of honey rather than at least one jar of honey but a large number of candidates treated the question as one with replacement rather than non replacement and so could only gain a maximum of two marks.

21% of candidates gained one mark either for obtaining $\frac{2}{10}$ or $\frac{8}{10}$ or $\frac{3}{10}$ seen as non replacement or for $\left(\frac{3}{11}\times\frac{3}{11}\right)$ or $\left(\frac{3}{11}\times\frac{8}{11}\right)$ or $\left(\frac{8}{11}\times\frac{3}{11}\right)$ following replacement.

16% of candidates gained two marks for obtaining $\left(\frac{3}{11}\times\frac{2}{10}\right)$ or $\left(\frac{3}{11}\times\frac{8}{10}\right)$ or $\left(\frac{8}{10}\times\frac{3}{11}\right)$ or for $\left(\frac{3}{11}\times\frac{3}{11}\right)+\left(\frac{3}{11}\times\frac{8}{11}\right)+\left(\frac{8}{11}\times\frac{3}{11}\right)$ following replacement.

Three marks were obtained by 4% of candidates when $\left(\frac{3}{11}\times\frac{2}{10}\right)+\left(\frac{3}{11}\times\frac{8}{10}\right)+\left(\frac{8}{11}\times\frac{3}{10}\right)$ was seen. The alternative method of 1 minus the probability of two jars of jam was rarely seen.

2. STATISTICS

2.1. MARK RANGES AND AWARD OF GRADE

Unit/Component	Maximum Mark (Raw)	Mean Mark	Standard Deviation	% Contribution to Award
5381F/05	30	21.5	5.8	20
5381H/06	30	17.3	7.1	20
5382F/07	25	15.7	4.1	15
5382H/08	25	14.8	5.5	15
5383F/09	25	13.4	5.2	15
5383H/10	25	15.4	5.6	15
5384F/11F	60	33.2	10.5	25
5384F/12F	60	39.4	11.5	25
5384H/13H	60	28.8	11.8	25
5384H/14H	60	37.6	10.6	25

GCSE Mathematics Grade Boundaries for 2381– November 2010

The table below gives the lowest raw marks for the award of the stated uniform marks (UMS).

Unit 1 – 5381

	A*	A	B	C	D	E	F	G
UMS (max: 55)				48	40	32	24	16
Paper 5381F				27	22	18	14	10
UMS (max: 80)	72	64	56	48	40	36		
Paper 5381H	29	24	17	11	7	5		

Unit 2 Stage 1 – 5382

	A*	A	B	C	D	E	F	G
UMS (max: 41)				36	30	24	18	12
Paper 5382F				21	17	14	11	8
UMS (max: 60)	54	48	42	36	30	27		
Paper 5382H	23	19	15	11	9	8		

Unit 2 Stage 2 - 5383

	A*	A	B	C	D	E	F	G
UMS (max: 41)				36	30	24	18	12
Paper 5383F				19	15	11	8	5
UMS (max: 60)	54	48	42	36	30	27		
Paper 5383H	24	21	16	12	8	6		

Unit 3- 5384

	A*	A	B	C	D	E	F	G
5384F_11F				41	33	25	17	9
5384F_12F				49	40	31	23	15
5384H_13H	51	40	29	19	10	5		
5384H_14H	58	48	38	29	17	11		

	A*	A	B	C	D	E	F	G
UMS (max: 139)				120	100	80	60	40
5384F				90	73	56	40	24
UMS (max: 200)	180	160	140	120	100	90		
5384H	108	88	68	48	27			

UMS BOUNDARIES

Maximum Uniform mark	A*	A	B	C	D	E	F	G
400	360	320	280	240	200	160	120	80