

# Principal Examiner Feedback

## Summer 2010

GCSE

### GCSE Mathematics (2381)

### Paper 5383F\_09

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## PRINCIPAL EXAMINER'S REPORT - FOUNDATION PAPER 9

### 1.1. GENERAL COMMENTS

- 1.1.1. It was encouraging to see that most candidates attempted all questions on the paper.
- 1.1.2. Candidates should be reminded that clarity of presentation is important as is the necessity to show working.
- 1.1.3. Candidates should be encouraged to consider the appropriateness of their answers. In question 3 a number of candidates gave the answer of £182.45 for the cost of two milkshakes and one beef burger.
- 1.1.4. 'Diagram not accurately drawn' means that measurements cannot be taken from the diagram. Many candidates attempted to measure angles in the diagram given in question 10.

### 1.2. REPORT ON INDIVIDUAL QUESTIONS

#### 1.2.1. Question 1

This question was answered very well indeed with the majority of candidates scoring full marks. In part (a) a popular incorrect answer was 60 which comes from taking the reading from the wrong axis.

#### 1.2.2. Question 2

Candidates were generally more successful in part (i) than in part (ii). A number of candidates were clearly confused about the difference between metric and imperial units with feet being a popular incorrect answer for part (i). In part (ii), a number of candidates gave the answer of volume. Other common incorrect answers were gallon, inch and metres.

#### 1.2.3. Question 3

The correct answer was obtained by the vast majority of candidates. A common error was to add up the price for one milkshake instead of two, provided this was done correctly one mark was still awarded. A significant number of candidates were able to identify the correct sum to be done but then made errors in their arithmetic. Others made errors when dealing with the mix of units leading to a frequently seen incorrect answer of £182.45.

#### 1.2.4. Question 4

Nearly all candidates recognised the term 'face' and were able to state that a cuboid has 6 faces. They were less successful with being able to identify an edge of a cuboid, the most common answer to this question being 8 which suggests that candidates are unsure of the difference between vertices and edges. Another commonly seen incorrect answer for part (ii) was 24 - twice the correct answer.

#### 1.2.5. Question 5

The correct answers were frequently seen to both parts (i) and (ii) but other numbers were seen just as frequently. In (ii) the most popular incorrect answers were 2 and 4. In (i) some candidates gave square numbers such as 16 and 25 that were not present in the list; this approach did not gain the mark.

#### 1.2.6. Question 6

The majority of candidates were able to give the correct answer to part (a) although  $7m$  was sometimes seen the result of candidates adding rather than subtracting the two terms. Common incorrect answers in part (b) were  $6cd$ ,  $8c + d$  and  $6c + d$ . In part (c) candidates were more likely to get the coefficient of  $a$  correct, incorrect coefficients of  $b$  were 10 and -2. Some candidates gave the answer of  $6ab$  without any working which scored no marks.

#### 1.2.7. Question 7

Virtually all candidates started off correctly by subtracting  $2 \times 7.50$  from 39.50 but a number were then unable to progress further. A good number were able to go on and then work out the correct number of child tickets, this was done either by division or by repeated addition. Of those who chose repeated addition, arithmetic errors were frequently seen. Some candidates showed the correct method but then counted the number of additions incorrectly or gave the total number of tickets bought rather than the number of child tickets bought.

#### 1.2.8. Question 8

In the main, candidates worked out either the volume of the carton and the small box and then attempted a division or else worked out how many of the small boxes would fit along each edge. Of those who used the volume approach the volumes were frequently worked out incorrectly, often one or other was a power of ten out. Many candidates were able to work out the number of small boxes there would be along each edge of the carton but then added rather than multiplied their three values. Completely incorrect approaches were to add the given dimensions of the carton and cuboid.

#### 1.2.9. Question 9

Responses to this question clearly showed that many candidates are still unable to use their calculator correctly. The most common incorrect answer, which appeared more frequently than the correct answer, came from evaluating  $6.5^2 \div 7.3 - 2.54$  rather than  $6.5^2 \div (7.3 + 2.54)$ . Some candidates correctly evaluated the numerator and denominator separately but even this approach frequently lead to errors with, at times,  $6.5^2$  being evaluated as 13.

#### 1.2.10. Question 10

Very few candidates were able to provide convincing answers to this question. The most common incorrect answer was to state that the answer should be  $40^\circ$  rather than  $040^\circ$ . Other incorrect approaches included ignoring the information that the diagram was not accurately drawn and simply measuring an angle in the diagram and trying to use the sum of angles on a straight line or in a triangle. Other candidates struggled to find the words to explain what they meant; simply saying that the angle was measured the wrong way round was not specific enough. The better candidates were able to either work out the correct answer or state that the bearing should have been measured clockwise rather than anticlockwise. In part (b) a few candidates who understood bearings gave the bearing of B from A rather than A from B as requested.

#### 1.2.11. Question 11

Success at this stage in the paper was very patchy. The majority of candidate attempted to evaluate rather than use the index laws. Common incorrect answers from those who gave their answer as powers of 7 was to multiply the powers in (i) and divide the powers in (ii). Another common incorrect method was to evaluate  $7^6$  and  $7^2$  as  $7 \times 6 = 42$  and  $7 \times 2 = 14$  then work out  $42 \times 14$ , a similar incorrect method was frequently seen for part (ii).

## 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	19.2	5.8	20
5381H/06	30	20.3	6.5	20
5382F/07	25	14.0	4.1	15
5382H/08	25	14.6	4.9	15
5383F/09	25	13.2	4.6	15
5383H/10	25	13.5	5.2	15
5384F/11F	60	30.6	12.1	25
5384F/12F	60	36.1	12.4	25
5384H/13H	60	32.8	10.7	25
5384H/14H	60	36.8	11.7	25

### GCSE Mathematics Grade Boundaries for 2381- June 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				24	20	16	12	8
UMS (max: 80)	72	64	56	48	40	36		
Paper 5381H	29	25	19	13	9	7		

#### Unit 2 Stage 1 - 5382

	A*	A	B	C	D	E	F	G
UMS (max: 41 )				36	30	24	18	12
Paper 5382F				19	15	12	9	6
UMS (max: 60 )	54	48	42	36	30	27		
Paper 5382H	23	19	14	10	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				18	15	12	9	6
UMS (max: 60 )	54	48	42	36	30	27		
Paper 5383H	22	18	14	10	6	4		

Unit 3- 5384

	A*	A	B	C	D	E	F	G
5384F_11F				44	34	24	15	6
5384F_12F				50	40	30	20	10
5384H_13H	53	43	33	24	14	9		
5384H_14H	59	48	37	27	15	9		

	A*	A	B	C	D	E	F	G
UMS (max: 139 )				120	100	80	60	40
5384F				94	74	54	35	16
UMS (max: 200)	180	160	140	120	100	90		
5384H	111	91	71	51	29	18		

UMS BOUNDARIES

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





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