

Mark Scheme (Results)

June 2011

International GCSE
Mathematics (4MA0) Paper 1F

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 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 Mark Scheme 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/>

June 2011

Publications Code UG028399

All the material in this publication is copyright

© Edexcel Ltd 2011

International GCSE Maths June 2011 - Paper 1F Mark scheme				
Apart from Question 16(b) (where the mark scheme states otherwise) the correct answer, unless clearly obtained by an incorrect method, should be taken to imply a correct method.				
Question	Working	Answer	Mark	Notes
1. (a)		1063	1	B1 cao
(b)	one thousand and eighty three		1	B1 Accept 1 for 'one' and 3 for 'three'. Condone omission of 'and'
(c)		tens	1	B1 Also accept 10, 50
(d)		1770	1	B1 cao
(e)		1530	1	B1 cao
(f)		1411	1	B1 cao
(g)		961	1	B1 cao
				Total 7 marks

2. (a)		China Russia	1	B1	Condone spelling errors
(b)		38	1	B1	Accept $35 < \text{ans} < 40$ even if non-integer
(c)		$10 < \text{bar} < 15$	1	B1	
(d)	10 : 15		2	M1	
		2 : 3		A1	SC if M0, award M1 for 3 : 2 or 1 : 1.5
					Total 5 marks

3.	(a)(i)	Award this mark for 'pyramid' even if accompanied by another word	pyramid	3	B1	Accept any recognisable spelling
	(ii)		cylinder		B1	
	(iii)		sphere		B1	
	(b)(i)		5	2	B1	cao
	(ii)		8		B1	cao
	(c)		14	3	B2	for 14 B1 for 13 or 15
		cm ³ or cubic centimetres			B1	indep Also accept ml or millilitres
						Total 8 marks

4.	(a)		1024 4096	2	B1	B1 for 1024 B1 for 4096
	(b)		eg $\times 4$	1	B1	
	(c)		6	1	B1	cao
						Total 4 marks

5.	(a)		3	1	B1	cao
	(b)	$7 + 3 + 4 + 9 + 10 + 2 + 3 + 4$ or 45		3	M1	for clear attempt to sum results or 45
		"45" $\div 9$			M1	dep for division by 9
			5		A1	cao
						Total 4 marks

6.	(a)	$\frac{16}{100}$		2	M1 for $\frac{16}{100}$ or $\frac{8}{50}$
			$\frac{4}{25}$		A1 cao
	(b)		0.07	1	B1 Also accept .07
	(c)		31	1	B1 cao
	(d)	eg $\frac{16}{100} \times 21$, $\frac{16}{100} \times 21\,000\,000$		2	M1
			3		A1 for 3 Also accept 3.4 or 3.36
					Total 6 marks

7.	(a)(i)		31	2	B1 cao
	(ii)	eg sum of angles on a straight line is 180°			B1 'line' and '180' needed
	(b)(i)		52	1	B1 cao
	(ii)	eg $180 - (81 + 52)$		2	M1 for sum and subtraction from 180
			47		A1 cao
					Total 5 marks

8.	(a)(i)		4.358898944	2	B1 Accept 3 or more dp rounded or truncated
	(ii)		4.36		B1 ft from (b)(i) if non-trivial ie (a) must have more than 3 dp
	(b)		4096	1	B1 cao
					Total 3 marks

9.	(a)		$3m$	1	B1	Also accept $3 \times m$, $m \times 3$, $m3$
	(b)		$9x - 5y$	2	B2	B1 for $9x$ B1 for $- 5y$
						Total 3 marks

10.	1210 seen			4	B1	Also award for 0.06
	"1210" – 60 or 1150				M1	for number with digits 121 – number with digit 6
	"1150" ÷ 2.5				M1	dep on first M1 for division by 2.5 or by 0.0025 as appropriate
			460		A1	cao
						Total 4 marks

11.	(a)	(2,3)(2,5)(2,7)(4,1)(4,3)(4,5)(4,7)(8,1)(8,3)(8,5)(8,7) and no extras		2	B2	B1 for 6 or more ignoring extras
	(b)	4MA0 2011	$\frac{7}{12}$	2	M1	for denominator ft from (a) if at least B1 scored
					A1	ft from (a) if M1 scored
						Total 4 marks

12.	(a)	$9 \times 3 + 7$ or $27 + 7$ or 34		2	M1
			17		A1 cao
	(b)	$26 \times 2 - 7$ or 45 or $\frac{? \times 3 + 7}{2} = 26$ oe		2	M1
			15		A1 cao
	(c)		$C = \frac{3d+7}{2}$ oe	3	B3 B2 for $\frac{3d+7}{2}$ oe B2 for $C = 3d + 7 \div 2$ oe B1 for $3d + 7 \div 2$ B1 for $C =$ linear expression in d
					Total 7 marks

13.	$\frac{52}{8}$ or 6.5		3	M1
	$2 \times 8 + 2 \times$ “6.5” or $16 + 13$			M1
		29		A1 cao
				Total 3 marks

14. (a)	$\frac{24.1}{0.6} - 38.44 = 40.166... - 38.44$		2	M1 for 0.6 or $\frac{3}{5}$ or 40.166... or $40\frac{1}{6}$ or 38.44 or $38\frac{11}{25}$
		1.726666667		A1 Accept if first 4 figures correct (rounded or truncated) Also accept $1.72\overline{6}$ or $\frac{259}{150}$ or $1\frac{109}{150}$
(b)		1.73	1	B1 ft from (a) if answer to (a) is a decimal with more than 3 sf
				Total 3 marks

					alternative method
15.	$((5 - 2) \times 180$ or 3×180 or $(2 \times 5 - 4) \times 90$ or 6×90 or $360 + 180$		4	M1	$360 - (83 + 66 + 53 + 96)$ Condone 1 incorrect ext angle
	540			A1 540 seen scores M1 A1	62
	"540" - (97 + 114 + 127 + 84)			M1 dep on first M1	180 - "62"
		118		A1 cao	
					Total 4 marks

16. (a)		$w(w - 9)$	2	B2 Award B2 also for $(w \pm 0)(w - 9)$ B1 for factors which, when expanded and simplified, give two terms, one of which is correct except B0 for $(w + 3)(w - 3)$ SC B1 for $w(w - 9w)$
(b)	$3x = -6$ or $3x = 1 - 7$ or $5x - 2x = -6$ oe		3	M2 for correct rearrangement with x terms on one side and numbers on the other AND correct collection of terms on at least one side M1 for $5x - 2x = 1 - 7$ oe ie correct rearrangement with x terms on one side and numbers on the other
		-2		A1 cao dep on M2
(c)	$y^2 + 3y - 7y$ 21		2	M1 for 3 correct terms out of 4 or for 4 correct terms ignoring signs or for $y^2 - 4y + n$ for any non-zero value of n
		$y^2 - 4y - 21$		A1 cao
				Total 7 marks

17. (a)	$1 - (0.6 + 0.3)$		2	M1
		0.1		A1 Also accept $\frac{1}{10}$ or 10%
(b)	30×0.6		2	M1
		18		A1 Do not accept $\frac{18}{30}$
				Total 4 marks

18.	$\frac{10}{12}$ and $\frac{9}{12}$ eg $\frac{10-9}{12}$, $\frac{10}{12} - \frac{9}{12}$		2	B2	B1 for $\frac{10}{12}$ or $\frac{9}{12}$ or for $\frac{5 \times 2}{6 \times 2}$ or $\frac{3 \times 3}{4 \times 3}$ Alternative method B1 for both fractions correctly expressed as equivalent fractions with denominators that are common multiples of 6 and 4 eg $\frac{20}{24}$ and $\frac{18}{24}$ or $\frac{5 \times 4}{6 \times 4}$ or $\frac{3 \times 6}{4 \times 6}$ B1 for correct answer which is equivalent to $\frac{1}{12}$ eg $\frac{2}{24}$ SC B1 for multiplying both sides by 12 ie $10 - 9 = 1$
					Total 2 marks

19. (a)		Rotation	3	B1	Also accept 'rotate', 'rotated' etc	These marks are independent but award no marks if the answer is not a single transformation
		90° clockwise		B1	Also accept quarter turn clockwise, -90° or 270°	
		(0, 0)		B1	Also accept origin, O	
(b)	vertices (4,4), (4,2), (5,2)	R correct	2	B2	Condone omission of label B1 for 2 correct vertices	
					Total 5 marks	

20.	3+5+7 or 15		3	M1	15 may be denominator of fraction or coefficient in an equation such as $15x = 90$
	$90 \div (3+5+7)$ or $90 \div 15$ or 6 or $\frac{7}{15}$ oe			M1	dep
		42		A1	Also award for 18 : 30 : 42
					Total 3 marks

21.	$1 \times 8 + 3 \times 5 + 5 \times 26 + 7 \times 17 + 9 \times 10 + 11 \times 5$ or $8 + 42 + 130 + 119 + 90 + 55$		3	M1	for finding at least four products $f \times x$ consistently within intervals (inc end points) and summing them
		444		M1	(dep) for use of halfway values
				A1	cao
					Total 3 marks

22.	(a)(i)		3, 5, 7, 11	2	B1	cao	Brackets not necessary
	(ii)		2, 3, 5, 7, 9, 11		B1	cao (B0 if 3 or 5 or 7 or 11 repeated)	
	(b)	Yes and gives either a specific explanation eg 8 is not an odd number, 8 is an even number or a general explanation which shows understanding of the symbol $\notin$ eg 8 is not a member of A, 8 does not belong to the set of odd numbers.			1	B1	
					Total 3 marks		

23.	$9.3^2 - 3.7^2$ or $86.49 - 13.69$ or 72.8		3	M1	for squaring and subtracting
	$\sqrt{9.3^2 - 3.7^2}$			M1	(dep) for square root
		8.53		A1	for answer rounding to 8.53
				Total 3 marks	

Further copies of this publication are available from
International Regional Offices at www.edexcel.com/international

For more information on Edexcel qualifications, please visit
www.edexcel.com

Alternatively, you can contact Customer Services at
www.edexcel.com/ask or on + 44 1204 770 696

Pearson Education Limited. Registered company number 872828
with its registered office at Edinburgh Gate, Harlow, Essex CM20 2JE

