



Pearson

Mark Scheme

Specimen Paper

Pearson Edexcel International GCSE
In Mathematics A (4MA1) Paper 1F

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications are awarded by Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

Specimen Paper

Publications Code 4MA1_1F_EAM_MS

All the material in this publication is copyright

© Pearson Education Ltd 2017

General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.
- **Types of mark**
 - M marks: method marks
 - A marks: accuracy marks
 - B marks: unconditional accuracy marks (independent of M marks)
- **Abbreviations**
 - cao – correct answer only
 - ft – follow through
 - isw – ignore subsequent working
 - SC - special case
 - oe – or equivalent (and appropriate)
 - dep – dependent
 - indep – independent
 - eeoo – each error or omission

- **No working**

If no working is shown then correct answers normally score full marks

If no working is shown then incorrect (even though nearly correct) answers score no marks.

- **With working**

If there is a wrong answer indicated on the answer line always check the working in the body of the script (and on any diagrams), and award any marks appropriate from the mark scheme.

If it is clear from the working that the "correct" answer has been obtained from incorrect working, award 0 marks.

Any case of suspected misread loses A (and B) marks on that part, but can gain the M marks.

If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.

If there is a choice of methods shown, then no marks should be awarded, unless the answer on the answer line makes clear the method that has been used.

If there is no answer on the answer line then check the working for an obvious answer.

- **Ignoring subsequent work**

It is appropriate to ignore subsequent work when the additional work does not change the answer in a way that is inappropriate for the question: eg. Incorrect cancelling of a fraction that would otherwise be correct.

It is not appropriate to ignore subsequent work when the additional work essentially makes the answer incorrect eg algebra.

Transcription errors occur when candidates present a correct answer in working, and write it incorrectly on the answer line; mark the correct answer.

- **Parts of questions**

Unless allowed by the mark scheme, the marks allocated to one part of the question CANNOT be awarded in another.

International GCSE Maths 1F				
Apart from Question 18d (where the mark scheme states otherwise), the correct answer, unless clearly obtained by an incorrect method, should be taken to imply a correct method.				
Q	Working	Answer	Mark	Notes
1 a		$\frac{4}{5}$	1	B1 cao
b		3 squares shaded	1	B1
c		0.2	1	B1 cao
d		70	1	B1 cao
				Total 4 marks

2	3.5 + 4.75 + 3.25 + 5 + 2.5 (=19) or 14 + 19 + 13 + 20 + 10 (=76)			M1
	152 ÷ "19" (=8) or 152 ÷ "76" (=2)			M1
	"8" × 5 or "2" × 20			M1
		40	4	A1
				Total 4 marks

3 a		8x	1	B1
b		24mp	1	B1
c		5	1	B1 cao
				Total 3 marks

4	$2 \times 1.5 \times 1000 (=3000)$ or $1.5 \times 1000 (=1500)$			M1
	“3000” $\div 180 (=16.6\dots)$ oe or “1500” $\div 180 \times 2$ oe (=16.6...)			M1 for a complete method
		16	3	A1
				Total 3 marks

5	ai		D	1	B1 cao
	aii		C	1	B1 cao
	aiii		A	1	B1 cao
	b		B, W, Y,Y,Y,Y,P,P	2	B2 B1 for either equal B and W or twice as many Y as P
					Total 5 marks

6	a				M1 for 1, 2, 3, 4, 6, 12 in A or 2, 3, 5, 7, 11 in B
					M1 for 2, 3 in intersection or 8, 9, 10 outside A and B
			correct Venn diag (see end of mark scheme)	3	A1
	bi		2, 3	1	B1 ft from Venn diagram
	bii		1, 4, 6, 8, 9, 10, 12	1	B1 ft from Venn diagram
					Total 5 marks

7	a		1	1	B1 cao
	b	$41 \div 2 (=20.5)$ or 0,0,0,0,0,1,1,1,1,1,1,1,1,1,1,1,1,1,2,2			M1
			2	2	A1
	c	$(0 \times 5) + (1 \times) 14 + 2 \times 11 + 3 \times 6 + 4 \times 3 + 5 (\times 1)$ or $14 + 22 + 18 + 12 + 5$			M1
			71	2	A1
	d				M1 for $\frac{10}{a}$ with $a > 10$ or $\frac{b}{40}$ with $b < 40$
			$\frac{10}{40}$ oe	2	A1
					Total 7 marks

8	a	$15 \times 12 \times 6$			M1
			1080	2	A1
	bi		8	1	B1 cao
	bii		12	1	B1 cao
					Total 4 marks

9	a	$3 \times 9 + 7 \times -2$ or $27 + -14$ oe			M1
			13	2	A1
	b	$3 \times (-4)^2 + 2^3$ or $3 \times 16 + 8$ oe			M1
			56	2	A1
					Total 4 marks

10	a		correct triangle (see end of mark scheme)	2	B2 for correct reflection if not B2 then B1 for a triangle in the correct orientation or 2 vertices correct
	bi		15	1	B1 cao
	bii		45	1	B1 cao
					Total 4 marks

11	a	eg. 21:10 to 00:00 is 2 hr 50 min or 21:10 to 23:45 is 2 hr 35 min			M1 for starting to find duration
			9hr 35min	2	A1
	b	$493 \div 11.25$			M1
			44	2	A1 accept 43.822... or 43.8
					Total 4 marks

12	$(-2, 7)$ $(-1, 4)$ $(0, 1)$ $(1, -2)$ $(2, -5)$ $(3, -8)$	correct graph	3	<p>B3 For a correct line between $x = -2$ and $x = 3$</p> <p>If not B3 then B2 for a correct straight line segment through at least 3 of $(-2, 7)$ $(-1, 4)$ $(0, 1)$ $(1, -2)$ $(2, -5)$ $(3, -8)$ OR for all of $(-2, 7)$ $(-1, 4)$ $(0, 1)$ $(1, -2)$ $(2, -5)$ $(3, -8)$ plotted but not joined OR for a line drawn with a negative gradient through $(0, 1)$ and clear intention to use a gradient of -3</p> <p>If not B2 then B1 for at least 2 correct points stated or plotted OR for a line drawn with a negative gradient through $(0, 1)$ OR a line with gradient -3</p>
				Total 3 marks

13	Angle BEF = 39° or Angle BCF = 63°			M1
	Angle CBF = $180 - 2 \times 63 (=54)$ or Angle BFE = $180 - 2 \times 63 (=54)$			M1
	$(x =) 180 - "39" - "54"$			M1
		87 with reasons	5	A2 with fully correct reasons for their method (A1 for one reason correctly stated and used) e.g. <u>Alternate angles</u> <u>Angles</u> on a <u>straight line</u> add up to <u>180°</u> <u>Angles</u> in a <u>triangle</u> add up to <u>180°</u> Base <u>angles</u> in an <u>isosceles triangle</u>
				Total 5 marks

14	$29 - 15 (= 14)$			M1
	“14” $\div 2 (=7)$			M1 method to find length or width of rectangle
	$(15 - 7) \div 2 (= 4)$			M1
	“7” \times “4”			M1
		28	5	A1
				Total 5 marks
	Alternative			
	$3x + 2y = 29$ or $x + 2y = 15$			M1
	$(29 - 15) \div 2 (=7)$			M1 method to find length or width of rectangle
	$(15 - 7) \div 2 (= 4)$			M1
	“7” \times “4”			M1
		28	5	A1
				Total 5 marks

15	$5400 \div (5 + 3 + 4) (=450)$			M1
	“450” $\times 5$ or “450” $\times 3$ or “450” $\times 4$			M1
		2250, 1350, 1800	3	A1 cao
				Total 3 marks

16	$120 \div 100^2 (=0.012)$ or $810 \div 120 (=6.75)$			M1
	$810 \div “0.012”$ or “6.75” $\times 100^2$			M1
		67 500	3	A1
				Total 3 marks

17	a	$140 = 2 \times 2 \times 5 \times 7$; $245 = 5 \times 7 \times 7$			M1 or lists at least 3 factors of each number (other than 1 and the number) (1, 2, 4, 10, 14, 35, 70, 140) (1, 5, 7, 35, 49, 245)
			35	2	A1
	b	50, 100, 150, 200, 250, 300, 350, 400 and 80, 160, 240, 320, 400 OR $2 \times 5 \times 5$ and $2 \times 2 \times 2 \times 5$			M1
		$2 \times 2 \times 2 \times 2 \times 5 \times 5$ or 400			M1 LCM found
			16 40	3	A1 or 4 40 pm
					Total 5 marks

18	a		$3y(2y + 5)$	2	B2	B1 for $3(2y^2 + 5y)$ or $y(6y + 15)$
	b	$m^2 + 9m - 5m - 45$			M1	M1 for 3 terms correct or 4 terms correct ignoring signs or $m^2 + 4m + \dots$ or $\dots + 4m - 45$
			$m^2 + 4m - 45$	2	A1	
	c	$2s = at^2$ or $\frac{s}{a} = \frac{1}{2}t^2$ or $\frac{2s}{a} = t^2$			M1	for a correct first step
			$t = (\pm)\sqrt{\frac{2s}{a}}$	2	A1	
	d	$6x - 5 = 2(x + 1)$ or $6x - 5 = 2x + 2$			M1	
		$6x - 2x = 2 + 5$			M1	
			1.75	3	A1	oe eg. $\frac{7}{4}$ dep on at least M1 scored
						Total 9marks

19	$1 - \frac{5}{8} \left(= \frac{3}{8} \right)$ or $100\% - 80\% (=20\%)$ or $\frac{1}{5} + \frac{3}{8} \left(= \frac{23}{40} \right)$				M1	may see decimal equivalents
	$\frac{4}{5} - \frac{3}{8}$ or $\frac{5}{8} - \frac{1}{5}$ or $1 - \frac{23}{40}$				M1	may see decimal or percentage equivalents
			$\frac{17}{40}$	3	A1	
						Total 3 marks

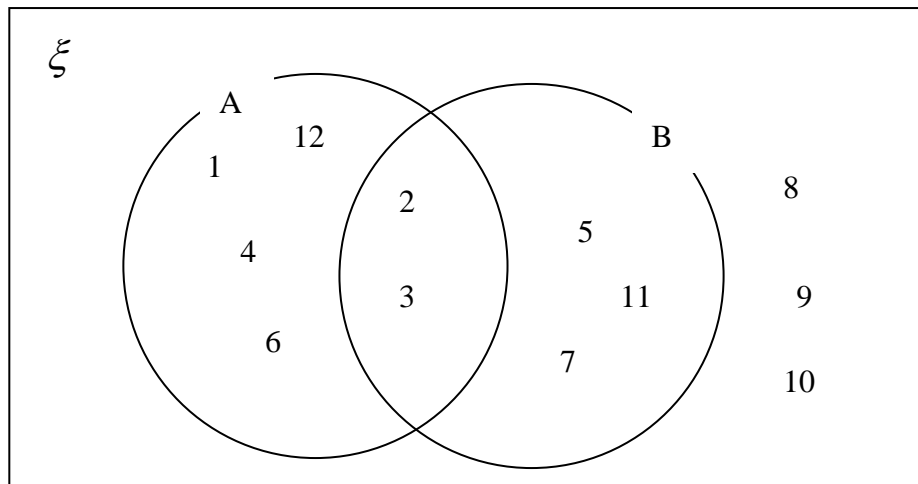
20	a	$0.03 \times 180\,000 (=5400)$			M1	M2 for $1.03 \times 180\,000$
		“5400” + 180 000			M1 dep	
			185 400	3	A1	
	b	$6630 = 85\% \text{ oe or } \frac{6630}{85} (= 78)$			M1	M2 for $6630 \div 0.85$
		$6630 \div 85 \times 100 \text{ or } “78” \times 100$			M1 dep	
			7800	3	A1	
						Total 6 marks

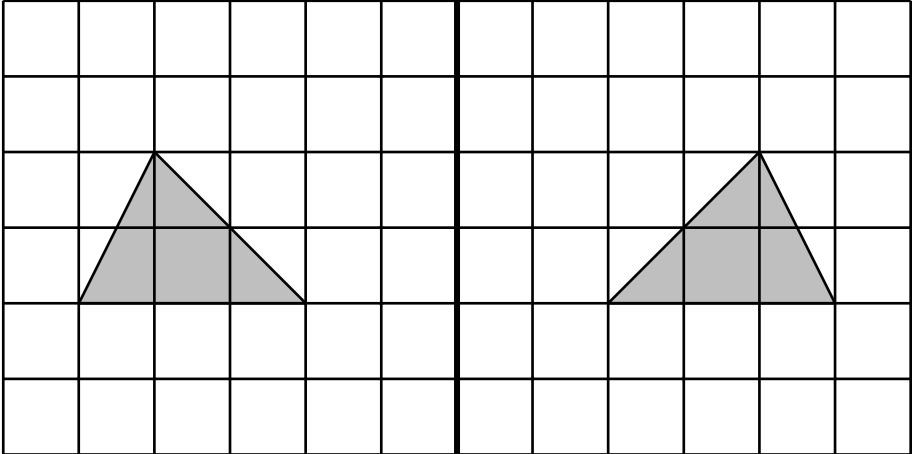
21		$42 \times 7 (=294) \text{ or } 8 \times 50 (=400)$			M1	
		$8 \times 50 - 42 \times 7$			M1	
			106	3	A1	
						Total 3 marks

22	a		93 000 000	1	B1	
	b		Singapore	1	B1	
	c	$1.382 \times 10^9 - 1.327 \times 10^9 \text{ oe or } 55\,000\,000$			M1	or for $5.5 \times 10^n \quad n \neq 7$
			5.5×10^7	2	A1	
						Total 4 marks

23	e.g. $(h^2 =) 14.5^2 - 10^2$ or $\cos x = \frac{10}{14.5}$			M1 start to find height or angle
	e.g. $(h =) \sqrt{14.5^2 - 10^2}$ (=10.5) or $(x =) \cos^{-1}\left(\frac{10}{14.5}\right)$ (=46.3...)			M1 complete method to find height or angle
	e.g. $\frac{1}{2} \times 20 \times "10.5"$ or $\frac{1}{2} \times 20 \times 14.5 \times \sin("46.3...")$			M1 (dep on M1) method to find area
		105	4	A1 cao
Total 4 marks				

6





Pearson Education Limited. Registered company number 872828
with its registered office at 80 Strand, London, WC2R 0RL, United Kingdom