edexcel

Mark Scheme (Results)

Summer 2014

Pearson Edexcel International GCSE Mathematics A (4MA0/2F) Paper 2F

Pearson Edexcel Level 1/Level 2 Certificate Mathematics A (KMA0/2F) Paper 2F

Edexcel and BTEC Qualifications
Edexcel and BTEC qualifications come from Pearson, the world's leading learning company. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information, please visit our website at www.edexcel.com.

Our website subject pages hold useful resources, support material and live feeds from our subject advisors giving you access to a portal of information. If you have any subject specific questions about this specification that require the help of a subject specialist, you may find our Ask The Expert email service helpful.
www.edexcel.com/contactus

Pearson: helping people progress, everywhere
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

Summer 2014
Publications Code UG039414
All the material in this publication is copyright
© Pearson Education Ltd 2014

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.

Apart from Question 23a (where the mark scheme states otherwise) the correct answer, unless obtained from an incorrect method, should be taken to imply a correct method.

Question	Working	Answer	Mark	Notes
1 (a)		7365, 7512, 7645, 7683	1	B1
(b)		0.035, 0.05, 0.3, 0.53	1	B1
(c) (i)		8541	1	B1
(ii)		1485	1	B1
(d)		42 or 48	1	B1 42 or 48 or 42, 48
				Total 5 marks

Question	Working	Answer	Mark	Notes
2 (a)		12	1	
(b)	$13 - 6$			M1
		7	2	A1
(c)		$3\frac{3}{4}$ calculators	1	B1
				Total 4 marks

Question	Working	Answer	Mark	Notes
3 (a)		diameter	1	B1
(b)		7.5 cm or 75 mm	2	B1 accept 7.3 - 7.7 B1 cm **or** B1 for 73 - 77 B1 mm **or** B1 for 2.9 - 3.1 B1 inches
(c) (i)		pyramid	1	B1
(ii)		prism	1	B1
(d) (i)		8	1	B1
(ii)		5	1	B1
				Total 7 marks

Question	Working	Answer	Mark	Notes
4	6.99 + 2×3.50 + 1.20 = 15.19			M1 intention to add all prices (may be seen as successive subtractions
	20 − "15.19"			M1 complete method
		4.81	3	A1
				Total 3 marks

Question	Working	Answer	Mark	Notes
5 (a) (i)		centimetres	1	B1 accept cm
(ii)		kilograms	1	B1 accept kg
(iii)		square metres	1	B1 accept m^2
(b)		6000	1	B1
(c)		35	1	B1
				Total 5 marks

Question	Working	Answer	Mark	Notes
6 (a) (i)		$5m$	1	B1 accept $m5$, $5\times m$, $m\times 5$
(ii)		$7ph$	1	B1 accept $ph7$, $p7h$ etc
(b)		3	1	B1
(c)		14	1	B1
				Total 4 marks

Question	Working	Answer	Mark	Notes
7 (a)		B , G	1	B1
(b)		F	1	B1
(c)		D	1	B1
				Total 3 marks

Question	Working	Answer	Mark	Notes
8 (a)	$2\times5 + 4$			M1 for substitution
		14	2	A1
(b)	$28 = 2a + 3$			M1 for correct substitution or rearrangement
	$a = \frac{28-3}{2}$			M1 for correct rearrangement of correct substitution
		12.5	3	A1 for 12.5 oe
				Total 5 marks

Question	Working	Answer	Mark	Notes
9 (a)		4%	1	B1
(b)	$\frac{3}{7} \times 224$			M1 for full method
		96	2	A1
(c)		14	1	B1
(d)		1024	1	B1
				Total 5 marks

Question	Working	Answer	Mark	Notes
10	$24 \times 5 = 120$			M1
	$120 \div 2 \times 0.4 = 24$ and $\frac{60}{3} \times 1 = 20$			M1
	"24" +"20" − 36			M1 dep
		8	4	A1
				Total 4 marks

Question	Working	Answer	Mark	Notes	
11 (a)		$\frac{32}{85}$	1	B1	
(b)	85 : 120			M1	SC : If M0 then award B1 for 24 : 17
		17 : 24	2	A1	
(c)	$35 \div 5$			M1 or $\frac{2}{5} \times 35$	
	7×2	14	2	A1	
(d)	$\frac{120}{10} \times 12$			M1 for full method	
		84	2	A1	
				Total 7 marks	

Question	Working	Answer	Mark	Notes
12 (a)(i)		16	1	B1
(ii)		7.5	1	B1 accept answers in range 7.4 - 7.6
(b)	eg 10×5 or 8×6.2			M1 for full method
		50	2	A1 accept 49.6 - 50
				Total 4 marks

Question	Working	Answer	Mark	Notes
13	$20 - 3 - 8 = 9$			M1 for fraction with denominator of 20 **or** numerator of 9
		$\frac{9}{20}$	2	A1
				Total 2 marks

Question	Working	Answer	Mark	Notes
14 (a)	40/16 **or** 16/40 40/55 **or** 55/40			M1
		22	2	A1
(b)	$\frac{9}{72}\times 360$			M1 for 9/72 **or** 72/9 **or** 360/72(=5)
		45	2	A1
				Total 4 marks

Question	Working	Answer	Mark	Notes
15	360 − (118 + 47 + 103)			M1
		92	2	A1
				Total 2 marks

Question	Working	Answer	Mark	Notes
16 (a)	$\pi \times 7.6^2$			M1
		181	2	A1 181(.4583...) accept answers 181 − 182 inclusive
(b) (i)		7.65	1	B1 accept $7.64\dot{9}$
(ii)		7.55	1	B1
				Total 4 marks

Question	Working	Answer	Mark	Notes
17 (a)	0.15 × 270 (=40.5)			M1 M2 for 0.85 × 270
	270 − "40.5"			M1 dep on M1 above
		229.50	3	A1 accept 229.5
(b)	13.50 ÷ 15 (=0.9)			M1 M2 for 13.5 ÷ 0.15
	"0.9" × 100			M1 dep on M1 above
		90	3	A1
				Total 6 marks

Question	Working	Answer	Mark	Notes
18	1 − (0.4 + 0.35 + 0.1)			M1
		0.15	2	A1
				Total 2 marks

Question	Working	Answer	Mark	Notes
19	360 ÷ 15			M1
		24	2	A1
				Total 2 marks

Question	Working	Answer	Mark	Notes
20	126 × 0.89 (=112.14)			M1
	165.24 ÷ 1.62 (=102)			M1
	"112.14" − "102"			M1 dep on both previous M marks "112.14" denotes ft from first M1 "102" denotes ft from second M1
		10.14	4	A1
				Total 4 marks

Question	Working	Answer	Mark	Notes
21	Arc centre B cutting BA and BC at P and Q where $BP = BQ$			M1 for arcs within guidelines
		correct bisector	2	A1 dep
				Total 2 marks

Question	Working	Answer	Mark	Notes
22	$18.6^2 - 7.2^2$ (=294.12)			M1 for squaring and subtracting
	$\sqrt{294.12}$			M1 (dep) for square root
		17.1	3	A1 for answer rounding to 17.1
				Total 3 marks

Question	Working	Answer	Mark	Notes
23 (a)	$5x = 17 + 6$ $7x - 2x = 23$			M2 for correct rearrangement with x terms on one side and numbers on the other **AND** collection of terms on at least one side or for $5x - 23 = 0$ or $23 - 5x = 0$ M1 for $7x - 2x = 17 + 6$ oe ie correct rearrangement with x terms on one side and numbers on the other **or** $5x - 6 = 17$ **or** $7x = 2x + 23$
		$4\frac{3}{5}$ oe	3	A1 Award full marks for a correct answer if at least 1 method mark awarded
(b)	$x^2 + 2x + 8x + 16$	$x^2 + 10x + 16$	2	B2 B1 for 3 correct terms ignoring signs or 4 correct terms with correct signs
				Total 5 marks

Question	Working	Answer	Mark	Notes
24	(6×5) + (10×15) + (19×25) + (15×35)			M2 All product, $t \times f$ using mid-points correctly and intention to add Award M1 if all products $t \times f$ using their mid-points consistently and intention to add **OR** 3 correct products correctly stated or evaluated
	"1180" ÷ 50			M1 (dep on at least M1) "1180" denotes ft from sum of their products
		23.6	4	A1 Accept 24 with working (24 without working gains M0A0)
				Total 4 marks

Question	Working	Answer	Mark	Notes
25 (a)		**5**, 0, −3, −4, **−3**, **0**, 5	2	B2 B1 for at least 2 correct
(b)		correct graph	2	B2 B1 ft for all points from table plotted correctly provided at least B1 scored in (a)
				Total 4 marks

TOTAL FOR PAPER: 100 MARKS

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