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# Mark Scheme (Results)

## January 2013

## International GCSE Specification A (4MA0) Paper 1F

## Level 1 / Level 2 Certificate in Mathematics (KMA0) Paper 1F

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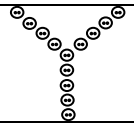
| Question | Working | Answer | Mark | Notes |
|---|---|---|---|---|
| **1.** (a) | | K2 | 1 | B1 accept 8611 |
| (b) | | Six thousand, one hundred and ninety four | 1 | B1 accept mis-spellings if meaning is clear |
| (c) | | 5900 | 1 | B1 |
| (d) | | 5895 | 1 | B1 accept Kilimanjaro |
| (e) | | 1085 | 1 | B1 |
| | | | | **Total 5 marks** |

| | | | | |
|---|---|---|---|---|
| **2.** (a) | | 5 | 1 | B1 |
| (b) | | 26 to 28 inclusive | 1 | B1 accept decimal values between 26 and 28 |
| (c) (i) | | Middle East | 1 | B1 |
| (c) (ii) | | 2/25 | 2 | B2 B1 for 8/100 or 4/50 |
| (d) | | Bar drawn >30 and < 35 | 1 | B1 Bar drawn between (not touching) heights 30 and 35 |
| | | | | **Total 6 marks** |

| | | | | |
|---|---|---|---|---|
| **3.** (a) | | 3/100 | 1 | B1 accept $100^{ths}$, hundredths, 1/100<br>(0).03, (0).01, {leading zeros not necessary} |
| (b) | | 7 | 1 | B1 accept 7.0, 7.00, 7.000 etc |
| (c) | | (0).75 | 1 | B1 leading zero not necessary |
| (d) | | 0.07, 0.14, 0.306, 0.35, 0.4 | 1 | B1 leading zeros not necessary |
| (e) | | 31/100 | 1 | B1 |
| | | | | **Total 5marks** |

| | | | | |
|---|---|---|---|---|
| **4.** (i) | | 5 (+) 7 (x) 8 or 5 (+) 8 (x) 7 | 1 | B1 Accept either answer |
| (ii) | | 2 (-) 6 (÷) 3 or 3 (-) 6 (÷) 2 | 1 | B1 Accept either answer |
| | | | | **Total 2 marks** |

| | | | | | |
|---|---|---|---|---|---|
| **5.** (a) | |  | 1 | B1 | 4 circles on each arm + 1 circle in middle.<br>Accept circles with or without dots. |
| (b) | 3 x 8 + 1 | 25 | 2 | M1<br>A1 | |
| (c) | (55 – 1) ÷ 3 or 55 = 3 "*x*" + 1 or 3 x 18 + 1 | 18 | 2 | M1<br>A1 | brackets not necessary<br>sc B1 for awrt 54.7 |
| | | | | | **Total 5 marks** |

| | | | | | |
|---|---|---|---|---|---|
| **6.** (a) | | Trapezium | 1 | B1 | (any recognisable spelling) accept trapezoid |
| (b) | | D and F or F and D | 1 | B1 | |
| (c) | | | 1 | B1 | angle marked in correct place in A or C or E and no errors (can be an arc with no label) |
| (d) | | 4 | 1 | B1 | |
| (e) | | 10 | 2 | B2 | B1 for 8=< area <10 or 10 <area =<12 or 5x2 |
| | | | | | **Total 6 marks** |

| | | | | | |
|---|---|---|---|---|---|
| **7.** (a) (i) | | 32° | 1 | B1 | |
| **7.** (a) (ii) | | (vertically) opposite angles (are equal) | 1 | B1 | must have "opposite angles" or "vertically opposite" as minimum (accept abbreviations if meaning is clear).<br>Do not accept amalgamations ("corresponding vertically opposite angles") |
| **7.** (b) (i) | | 45° | 1 | B1 | |
| **7.** (b) (ii) | | (sum of) angles at a point = 360° | 1 | B1 | a full turn / circle = 360° must mention 360<br>Ignore calculations if on their own<br>Do not accept "angles add up to 360°" |
| **7.** (c) | (180 – 32) ÷ 2 | 74 | 2 | M1<br>A1 | "148" ÷ 2<br><br>N.B. 164 (implied from 180 – 16 ) on answer line with no working = M1A0 |
| | | | | | **Total 6 marks** |

| | | | | |
|---|---|---|---|---|
| **8.** (a) | 43 – 15 | 28 | 2 | M1 or 43 and 15 isolated<br>A1 |
| **8.** (b) | original 10 numbers in correct order (ascending or descending order and can be seen in any part of the question) | 32 | 2 | M1 or 30 and 34 isolated<br>A1 |
| **8.** (c) (i) | | Stay the same | 1 | B1 |
| **8.** (c) (ii) | middle two numbers are the same / order is the same / 18 is the smallest number / correct new order stated | | 1 | B1 dependent on ci correct |
| | | | | **Total 6 marks** |

| | | | | |
|---|---|---|---|---|
| **9.** (a) | | – 4 | 1 | B1 |
| **9.** (b) | | 1296 | 1 | B1 |
| **9.** (c) | | 31 | 1 | B1 |
| **9.** (d) | | 7 | 1 | B1 |
| | | | | **Total 4 marks** |

| | | | | |
|---|---|---|---|---|
| **10.** (a) | $6x = 20 - 5$ or $6x = 15$ or $(20 - 5) \div 6$ | 2.5 oe | 2 | M1 Brackets not necessary<br>A1 Correct answer with no working = M1A1<br>sc M1 A0 for 19.16 or better. |
| **10.** (b) | $8y - 20 = 30$ or $2y - 5 = 30 \div 4$<br>$8y = 20 + 30$ or $2y = (30 \div 4) + 5$ | 6.25 oe | 3 | M1 M1 for $8y - 20$<br>M1<br>A1 dep on M1 awarded otherwise M0A0 |
| | | | | **Total 5marks** |

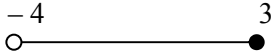
| | | | | | |
|---|---|---|---|---|---|
| **11.** (a) | 600 x 9.54 | 5724 | 2 | M1<br>A1 | |
| **11.** (b) | 3 hrs 30 mins (+) 8hrs 15 mins<br>or 3.5 (+) 8.25 or 3.30 (+) 8.15<br><br>11 (hrs) or 45 mins | 11 (hrs) 45(mins) | 3 | M1<br><br><br>B1<br>A1 | both values correctly stated in hours and mins<br>Do not accept 3.30 hrs (+) 8.15 hrs<br><br>hrs or mins correct<br>Fully correct answer = M1B1A1 |
| **11.** (c) | 1470 ÷ 9.8 | 150 | 2 | M1<br>A1 | |
| | | | | | **Total 7 marks** |
| **12.** (a) | 3 x 2 + 4 x 6 | 30 | 2 | M1<br>A1 | M1 for 3 x 2 and 4 x 6 or 6 and 24 |
| **12.** (b) (i) | | $7mn$ (oe) | 1 | B1 | no x signs |
| **12.** (b) (ii) | | $6y^4$ | 1 | B1 | |
| **12.** (b) (iii) | | $9g - 6h$ | 2 | B2 fully correct final answer. | B1 for $9g$ or $-6h$ |
| **12.** (c) | | $6t - 12$ | 1 | B1 | accept 6 x t for 6t |
| | | | | | **Total 7 marks** |

| | | | | | |
|---|---|---|---|---|---|
| **13.** (a) | 1 – (0.18 + 0.2 + 0.23 + 0.22) | 0.17 | 2 | M1<br>A1 | 1 – 0.83 |
| **13.** (b) | 40 x 0.2 | 8 | 2 | M1<br>A1 | 8 out of 40 = M1A1 8/40 = M1A0 |
| | | | | | **Total 4 marks** |

| | | | | |
|---|---|---|---|---|
| **14.** (a) | 45/625 x 100 | 7.2 | 2 | M1<br>A1 |
| **14.** (b) | 8/100 x 45 (= 3.6)<br>45 + "3.6" | 48.6(0) | 3 | M1 or M2 for 45 x 1.08<br>M1 dep<br>A1 |
| **14.** (c) | 640 – 625 (= 15)<br>"15" / 625 or "15" / 640 | 2.4 | 3 | M1 640/625 (= 1.024) 625/640 (= 0.976.. or 0.977)<br>M1 dep "1.024" – 1 (= 0.024) 1 – "0.976" (= 0.0234)<br>A1 |
| **14.** (d) | 18 ÷ 1 1/3 or 18 ÷ 1.33 (2dp or better) or 18 ÷ 80 x 60 | 13.5 | 3 | M2 M1 for 1 1/3 or 18 ÷1.2 (=15)<br>or 18 ÷ 1.3 (13.8..) or 18 ÷ 80 (=0.225)<br>A1 cao |
| | | | | **Total 11 marks** |

| | | | | |
|---|---|---|---|---|
| **15.** (a) | | **Q** correct | 3 | B3 Bottom LH corner goes to (4, –2)<br>If not B3 then B2 for correct size T shape in wrong position but with correct orientation<br>If not B2 then B1 for T shape with 2 or more sides of correct length and correct orientation |
| **15.** (b) | | **R** correct | 2 | B2 Bottom LH corner goes to ( –11,3)<br>If not B2 then B1 for rotation of ± 90° (wrong position) |
| | | | | **Total 5 marks** |
| **16.** | $2y = 6$ or $4x = -6$ oe | $x = -1.5$ $y = 3$ | 3 | M1 Adding or subtracting correctly or correct substitution leading to one correct equation and one unknown<br>A1 A1 dep on M1 awarded otherwise M0A0 |
| | | | | **Total 3 marks** |

| | | | | |
|---|---|---|---|---|
| **17.** (a) | | $25 < d \leq 30$ | 1 | B1 identifies 25 →30 class |
| **17.** (b) | (12 x 2.5) + (6 x 7.5) + (4 x 12.5) + (6 x 17.5) + (14 x 22.5) + ( 18 x 27.5)<br>(totals: 30, 45, 50, 105, 315, 495) | 1040 | 3 | M2 do not have to see intention to add<br>If not M2 then M1 for freq x consistent interval value (890 = freq x lower limit, 1190 = freq x upper limit) or 3 or more correct products stated or evaluated<br>A1 isw if 1040 calculated correctly and correct mean calculation follows (1040 ÷ 60 = 17.3 or better) |
| | | | | **Total 4 marks** |

| | | | | |
|---|---|---|---|---|
| **18.** (i) | $-2 - 2 < x$ and $x \leq 5 - 2$ | $-4 < x \leq 3$ | 2 | M1 condone omission/addition of "equals" in inequalities<br>A1cao accept $x > -4$ and $x \leq 3$ (both present) |
| **18.** (ii) |  | | 2 | B2 ft ft for an inequality where range lies between – 5 and +5<br>If not B2ft then B1ft for correct values but wrong shading of end circles |
| | | | | **Total 4 marks** |

| | | | | |
|---|---|---|---|---|
| **19.** (a) | 7.9 x cos 38° or 7.9 x sin 52° | 6.23 | 3 | M2 M1 for cos 38° or sin 52° selected<br>A1 6.2252… awrt 6.23 |
| **19.** (b) (i) | | 37.5 | 1 | B1 |
| **19.** (b) (ii) | | 38.5 or 38.49 rec | 1 | B1 |
| | | | | **Total 5 marks** |

| | | | | |
|---|---|---|---|---|
| | | | | **TOTAL: 100 marks** |

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