Comparison of key skills specifications 2000/2002 with 2004 standardsX015461July 2004Issue 1

Mark Scheme

Mock Set 5

Pearson Edexcel GCSE (9 – 1)

In Mathematics (1MA1)

Foundation (Non-Calculator) Paper 1F

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Paper 1F Mock Set 5 Mark Scheme v1.0

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**General marking guidance**

These notes offer general guidance, but the specific notes for examiners appertaining to individual questions take precedence.

**1** All candidates must receive the same treatment. Examiners must mark the last candidate in exactly the same way as they mark the first.

Where some judgement is required, mark schemes will provide the principles by which marks will be awarded; exemplification/indicative content will not be exhaustive. When examiners are in doubt regarding the application of the mark scheme to a candidate’s response, the response should be sent to review.

**2** All the marks on the mark scheme are designed to be awarded; mark schemes should be applied positively. Examiners should also be prepared to award zero marks if the candidate’s response is not worthy of credit according to the mark scheme. If there is a wrong answer (or no 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.

**Questions where working is not required**: In general, the correct answer should be given full marks.

**Questions that specifically require working**: In general, candidates who do not show working on this type of question will get no marks – full details will be given in the mark scheme for each individual question.

**3 Crossed out work**

This should be marked **unless** the candidate has replaced it with

an alternative response.

**4 Choice of method**

If there is a choice of methods shown, mark the method that leads to the answer given on the answer line.

If no answer appears on the answer line, mark both methods **then award the lower number of marks.**

**5** **Incorrect method**

If it is clear from the working that the “correct” answer has been obtained from incorrect working, award 0 marks. Send the response to review for your Team Leader to check.

**6** **Follow through marks**

Follow through marks which involve a single stage calculation can be awarded without working as you can check the answer, but if ambiguous do not award.

Follow through marks which involve more than one stage of calculation can only be awarded on sight of the relevant working, even if it appears obvious that there is only one way you could get the answer given.

**7** **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 or its context. (eg. an incorrectly cancelled fraction when the unsimplified fraction would gain full marks).

It is not appropriate to ignore subsequent work when the additional work essentially makes the answer incorrect (eg. incorrect algebraic simplification).

**8** **Probability**

Probability answers must be given as a fraction, percentage or decimal. If a candidate gives a decimal equivalent to a probability, this should be written to at least 2 decimal places (unless tenths).

Incorrect notation should lose the accuracy marks, but be awarded any implied method marks.

If a probability fraction is given then cancelled incorrectly, ignore the incorrectly cancelled answer.

**9** **Linear equations**

Unless indicated otherwise in the mark scheme, full marks can be gained if the solution alone is given on the answer line, or otherwise unambiguously identified in working (without contradiction elsewhere). Where the correct solution only is shown substituted, but not identified as the solution, the accuracy mark is lost but any method marks can be awarded (embedded answers).

**10 Range of answers**

Unless otherwise stated, when an answer is given as a range (e.g 3.5 – 4.2) then this is inclusive of the end points (e.g 3.5, 4.2) and all numbers within the range.

**11 Number in brackets after a calculation**

Where there is a number in brackets after a calculation E.g. 2 × 6 (=12) then the mark can be awarded **either** for the correct method, implied by the calculation **or** for the correct answer to the calculation.

**12 Use of inverted commas**

Some numbers in the mark scheme will appear inside inverted commas E.g. “12” × 50 ; the number in inverted commas cannot be any number – it must come from a correct method or process but the candidate may make an arithmetic error in their working.

**13 Word in square brackets**

Where a word is used in square brackets E.g. [area] × 1.5 : the value used for [area] does **not** have to come from a correct method or process but is the value that the candidate believes is the area. If there are any constraints on the value that can be used, details will be given in the mark scheme.

**14 Misread**

If a candidate misreads a number from the question. Eg. uses 252 instead of 255; method or process marks may be awarded provided the question has not been simplified. Examiners should send any instance of a suspected misread to review.

|  |
| --- |
| **Guidance on the use of abbreviations within this mark scheme** |
| **M** method mark awarded for a correct method or partial method  **P** process mark awarded for a correct process as part of a problem solving question  **A** accuracy mark (awarded after a correct method or process; if no method or process is seen then full marks for the question are implied but see individual mark schemes for more details)  **C** communication mark awarded for a fully correct statement(s)  with no contradiction or ambiguity  **B** unconditional accuracy mark (no method needed)  **oe** or equivalent  **cao** correct answer only  **ft** follow through (when appropriate as per mark scheme)  **sc** special case  **dep** dependent (on a previous mark)  **indep** independent  **awrt** answer which rounds to  **isw** ignore subsequent working |

| **Paper: 1MA1/1F** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Question** | | **Answer** | **Mark** | **Mark scheme** | **Additional guidance** |
| 1 |  | 41 000 | B1 | cao |  |
| 2 |  | 8000 | B1 | cao |  |
| 3 |  | 0.05, 0.5, 0.507, 0.57, 0.577 | B1 |  | Accept reverse order |
| 4 |  | 2 (hours)  30 (minutes) | B1 | cao |  |
| 5 | (a) | unlikely | B1 | cao |  |
|  | (b) | evens | B1 | cao |  |
| 6 |  | Yes and correct figures | P1 | for process to start  eg 62 + 18 (= 80) **or** 54 + 7 (= 61) **or** 54 + 7 + 17 (= 78)  **or** 62 – 54 (= 8) **or** 18 – 7 (= 11) |  |
|  |  |  | P1 | for a complete process  eg 62 – 54 (= 8) **and** 18 – 7 (= 11)  **or** 62 + 18 (= 80) **and** 54 + 7 + 17 (= 78)  **or** “8” + “11” (= 19) **or** “80” – “61” (= 19) |  |
|  |  |  | C1 | for yes with 19 **or** with 80 and 78 |  |
| 7 | (a) | 11 | B1 | for 11 accept –11 |  |
|  | (b) | 1 | M1 | for listing the temperatures in order **or** for an answer of – 4 | Condone one error or additional number |
|  |  |  | A1 | cao |  |
| 8 |  | and comparable values | P1 | for process to find comparable values,  eg = 30% **or** = 0.3, 25% = 0.25  **or** **or** 25% = , = | Accept equivalences |
|  |  |  | A1 | For and correct comparable values | Accept equivalences |
| 9 | (a) | 1, 2 | B1 | cao |  |
|  | (b) | Point at (–1, –3) | B1 | point marked unambiguously at (–1, –3), accept point marked at (5, –1) or (–3, 5) | Condone missing label |
|  | (c) | Point at (4, 3) | B1 | point marked unambiguously | Condone missing label |
| 10 | (a) | 4500 | P1 | for evidence of rounding used in a correct process  eg 20 × 30, 20 × 28, 100 × 9 |  |
|  |  |  | P1 | (indep) for a complete process to find the total cost  eg (“20” × “30” – 100) × “9” oe | This mark can be awarded with or without evidence of any rounding |
|  |  |  | A1 | Accept an answer in the range 4140 to 4600 |  |
|  | (b) | Overestimate with reason | C1 | ft from (a) eg overestimate as numbers rounded up |  |
|  |  |  |  |  |  |
| 11 | (a) | 310 | P1 | accept answer in range 310 to 315 |  |
|  | (b) | No and correct figures | M1 | for a complete method, eg  attempts to read from the graph at a factor of 800 **and** scales up to 800 **or** attempts to read from the graph at a factor of 30 **and** scales up to 30  **or** attempts to read from the graph at two numbers that sum to 800 or sum to 30 **and** finds the sum of their readings |  |
|  |  |  | A1 | for (800 grams =) 28 to 28.4 **or** (30 ounces =) 840 to 870 |  |
|  |  |  | C1 | (dep M1) ft for correct decision for their values |  |
| 12 |  | 9 | M1 | for a correct first step, eg  adding 7 to both sides **or** dividing all terms by 4 | Division by 4 must be ALL terms |
|  |  |  | A1 | cao |  |
| 13 |  | 55 | M1 | for method to find an unknown angle, eg *ABC* = 360 – 260 (= 100) **or** *ADC* = 180 ­– 25 (= 155) | May be seen on diagram |
|  |  |  | M1 | for complete method, eg 360 – 50 – “100” – “155” |  |
|  |  |  | A1 | cao |  |
|  |  |  | C1 | (dep M1) for two reasons appropriate to their method, from  angles at a point add up to 360º  angles on a straight line add to 180º  angles in a quadrilateral add to 360º | Underlined words need to be shown; reasons need to be linked to their method; any reasons not linked do not credit  Accept ‘4-sided shape’ for quadrilateral |

| **Paper: 1MA1/1F** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Question** | | **Answer** | **Mark** | **Mark scheme** | **Additional guidance** |
| 14 | (a) |  | B1 | for oe |  |
|  | (b) |  | M1 | for using a suitable common denominator with at least one of two fractions correct, eg + |  |
|  |  |  | A1 | for oe |  |
| 15 |  | 3*x* + 4 | B2 | for 3*x* + 4 oe |  |
|  |  |  | (B1 | for 3*x* or“3*x*”+ 4) | “3*x*” must be identified as the expression for Lethna’s age. |
| 16 |  | 10 | M1 | for a start to the method,  eg 15 ÷ 6 (= 2.5) **or** 6 ÷ 15 (= 0.4) **or** 6 ÷ 4 (= 1.5) **or** 4 ÷ 6 (= 0.66…) oe | Could be seen expressed as ratios  eg 15 : 6 = 5 : 2 leading to 10 : 4 |
|  |  |  | A1 | cao | Must be in the correct place in the table |
|  |  | 26 | M1 | for a complete method,  eg 65 ÷ “2.5” **or** 65 × “0.4” **or** 65 ÷ “10” × 4 **or** 65 ÷ 15 × 6 oe | Could be seen expressed as ratios  eg 5 : 2 = 65 : 26 |
|  |  |  | A1 | cao | Must be in the correct place in the table |
| 17 |  | 1 : 3 | M1 | for 450 ÷ 150 **or** for simplified ratio equivalent to 150 : 450 **or** for answer of 3 : 1 oe ratio in form *n* : 1 |  |
|  |  |  | A1 | cao | Accept *n* = 3 |
|  |  |  |  |  |  |
| 18 |  | 10.50 | P1 | for a process to find of 90 **or** 45% of 90  eg 90 ÷ 3 (= 30) **or** 0.45 × 90 oe (= 40.5(0)) |  |
|  |  |  | P1 | for a complete process to find 55% of 90 (= 49.5(0)) **or** of 90 (= 60)  or for a complete process to find both discounts  eg 90 ÷ 3 (= 30) **and** 0.45 × 90 oe (= 40.5(0) |  |
|  |  |  | P1 | (dep on P2) for [cost without Store card] – [cost with Store card]  or [discount with store card] ‒ [discount without store card] |  |
|  |  |  | A1 | for 10.5(0) |  |
| 19 |  | 95.91 | M1 | for complete correct method with relative place value correct including addition of all the appropriate elements of the calculation eg two lines of 1st method, internal numbers of grids, or complete structure shown of partitioning methods | 1251  8340  9591   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  | **4** | | **1** | | **7** | |  | |  | 0 | 8 | 0 | 2 | 1 | 4 | **2** | | 9 | 1 | 2 | 0 | 3 | 2 | 1 | **3** | |  | 5 | | 9 | | 1 | |  |  |  |  |  |  | | --- | --- | --- | --- | | × | 400 | 10 | 7 | | 20 | 8000 | 200 | 140 | | 3 | 1200 | 30 | 21 |   8000 + 1200 + 200 + 30 + 140 + 21 = 9591 |
|  |  |  | A1 | for digits 9591 |  |
|  |  |  | A1 | (ft dep M1) for correct placement of the decimal point into their final answer |  |
| 20 |  | 5*m* + 6 | M1 | for 2*m* – 6 **or** 3*m* + 12 |  |
|  |  |  | A1 | cao |  |
| 21 | (a) | Description | C1 | for description of relationship, eg the greater the age the less the value (price, cost etc) oe, accept negative correlation | Do NOT accept “negative”, “negative relationship” or “negative proportion” |
|  | (b) | Line of best fit | C1 | for a single straight line that could be used to take readings |  |
|  | (c) | Explanation | C1 | for explanation, eg the LOBF would have to be used outside the data |  |
| 22 |  | 60 | P1 | for process to find number studying French, eg 270 ÷ 9 × 2 (= 60) |  |
|  |  |  | P1 | for process to find number studying Spanish, eg “60” ÷ 3 × 7 (= 140) |  |
|  |  |  | P1 | (dep P1) for process to find number studying German,  eg 270 – [number studying French] – [number studying Spanish] (= 70) | [number studying French] and [number studying Spanish] must be clearly identified eg from working |
|  |  |  | P1 | for process to find a percentage, eg 42 ÷ “70” × 100 oe |  |
|  |  |  | A1 | cao |  |
| 23 | (a) |  | B2 | cao | Any orientation |
|  |  |  | (B1 | for a 4 by 4 square) |  |
|  | (b) |  | M1 | for attempt at a 3D sketch with a pentagonal face | Hidden edges may or may not be shown |
|  |  |  | A1 | for a correct 3D sketch | Do not accept a sketch which shows additional flaps |
| 24 |  | 25 | P1 | for substituting, eg 3 = **or** (*A* =) 1500 ÷ 3 (= 500) |  |
|  |  |  | P1 | (dep P1) for [area of base] ÷ 20 | [area of base] must be clearly stated or come from an attempt at using the formula if 500 is not being used |
|  |  |  | A1 | cao |
| 25 | (a) | 2.47 × 105 | B1 | cao |  |
|  | (b) | 0.00065 | B1 | cao |  |
|  | (c) | 2.4 × 10 –12 | M1 | for 3 × 8 (= 24) **and** 10 (-7 + - 6) (=10 -13)  **OR** for 0.0000000000024 oe eg 0.24 × 10 -11 **or** 24 × 10 -13  **OR** for an answer of 2.4 × 10 *n* where *n* ≠ –12 |  |
|  |  |  | A1 | cao |  |
| 26 |  | 4.5 | P1 | for process to find area of square, eg (24 ÷ 4) 2 (=36) | Award for 62 or 36 seen |
|  |  |  | P1 | for start of process to find area of trapezium,  eg (*x* + 3*x*) × 8 **or** (*AB* + 3*AB*) × 8 **or** *x* × 8 + × 2*x* × 8 |  |
|  |  |  | P1 | for using a suitable equation, eg (*x* + 3*x*) × 8 = 2 × “36” |  |
|  |  |  | A1 | cao | Accept oe |
| 27 |  | 6.5 | M1 | for 6 × 10 (= 60) **or** 14 × 5 (= 70) |  |
|  |  |  | M1 | for a complete method, eg (“60” + “70”) ÷ 20 **or** |  |
|  |  |  | A1 | cao | Accept |
| 28 |  | 2.5, −1.5 | M1 | for a correct method to eliminate *x* or *y* or method leading to substitution (condone one arithmetic error) |  |
|  |  |  | M1 | (dep) for substituting found value in one of the equations  **or** corrrect method after starting again (condone one arithmetic error) |  |
|  |  |  | A1 | *x* = 2.5 oe and *y* = −1.5 oe |  |

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