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



Mark Scheme

Mock Paper – Set 1

Pearson Edexcel GCSE

In Mathematics (1MA1)

Higher (Non Calculator) Paper 1H

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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 answer is given on the answer line using both incorrect and correct notation, award the 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.

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| **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**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 |

**Mark scheme GCSE (9 – 1) Mathematics**

| **Mock Paper 1MA1: 1H** |
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| **Question** | **Working** | **Answer** | **Mark** | **Notes** |
| 1 |  |  |  | 3 | M1 for conversion to improper fractions, e.g. or for M1 for a complete correct methodA1 for  oe |
| 2 | (a)(i) |  | Fixed charge | 1 | C1 for correct interpretation e.g. the starting price |
|  | (a)(ii) |  | The cost per minute | 1 | C1 for correct interpretation e.g. how much the price increases every minute |
|  | (b) |  | *y* = 1.5*x* + 0.5 | 3 | M1 for an attempt to calculate the gradient, with 2 correct values used, e.g. 7.5 ÷ 5, **or** *y*-intercept foundM1 for gradient of 1.5 in an equation **or** 1.5*x* + 0.5A1 for the correct equation |
| 3 |  | 4 × 8 = 32 32 + (3 × 8) | 44  | 5 | P2 for or for a height of 3(P1 for 52 − 42)P1 for process to find one area P1 for a complete process to find the total areaA1 cao  |
| 4 |  | 2.5 × 110 = 275 miles275 + 37 = 312 miles312 ÷ 3 = 104 mph110 – 104 = 6 mph | 6  | 4 | P1 for process to find distance, e.g. 2.5 × 110 (= 275)P1 for process to find speed for Gill’s journey using their distance for Tarek’s journeye.g. (275 + 37) ÷ 3 (= 104) P1 for a complete process to find difference in speedsA1 cao |
| 5 | (a)  |  | White = 36Green = 6Blue = 18 | 5 | P1 for process to start to solve the problem, e.g. 600 ÷ 60, or 6 × 1.8P1 for a complete process to find the total number of tiles (= 60)P1 for × 60 (= 36)P1 for (60 – 36) ÷ 4A1 cao |
| 5 | (b) |  | Correct statement  | 1 | C1 e.g. Fewer tiles may be needed |
| 6 |  |  | Result shown | 4 | M1 for 40 × 0.5 (= 20) **or** *x* axis scaled correctlyM1 for total distance of 80 miles **or** *y* axis scaled correctlyA1 for 1.25 hours oe or a completed travel graphC1 for correct conclusion with either 16 45 or a correct graph |
| 7 |  |  | 2000 | 3 | B1 for correctly rounding two of the three values (40, 100, 0.2)M1 for partially completing the calculation, e.g. (40 × 10) ÷ 0.2, 400 ÷ 0.2A1 cao |
| 8 |  |  | Translation | 2 | B1 for TranslationB1 for  |
| 9 |  |  | 6 | 3 | P1 for a process to start to solve the problem, e.g. 8 × 5 (= 40) machine days, **and** “40” $–$ (4 × 2) (= 32) machine days left **or**  complete **or**  leftP1 For a complete process to solve the problem, e.g. 32 ÷ 8 (= 4) and 2 + “4” or × 5A1 cao |
| 10 |  |  |  | 1 | cao |
| 11 |  |  | A & YB & XC & ZD & W | 2 | B2 for all correct(B1) for two or three correct |
| 12 |  |  | 20 | 3 | M1 for 52 – 41.6 (= 10.4)M1 “10.4” ÷ 52 × 100A1 for 20 |
| 13 |  |  | Proof | 3 | M1 for expressions to represent any 2 different odd numbers,e.g. 2*n* +1 and 2*m* + 1M1 for method to subtract and factorise.C1 correct expression and conclusion |
| 14 |  |  |  | 3 | M1 for method to find 2 multiples of 0.624 that can be used to eliminate the decimalsM1 for complete methodA1 cao |
| 15 |  |  | 22.5 | 4 | P1 for (*x*2 – 30*x*)P1 for process to complete the square, e.g. ((*x* – 15)2 – 225) P1 for  or substitution of *x* = 15A1 cao**OR**P1 for *x*2 – 3*x* = 0P1 for *x* = 0 and *x* = 30P1 for substitution of *x* = 15A1 cao |
| 16 | (a) |  | Evaluation | 1 | C1 for correct evaluation of method seen, e.g. should have used  instead of  (need to see both fractions) |
| 16 | (b) |  | Evaluation | 1 | C1 for correct evaluation of result shown, e.g. the constant term should be −6 not +6 or complete simplified expansion |
| 17 |  |  | 66 | 4 | M1 for method to find *ODB* or *OAB*M1 for complete method to find *AOB*C2 for 66 with all reasons appropriate for their method(C1 (dep on M1) for one appropriate circle theorem reason for their method)Alternate segment theoremBase angles of an isosceles triangle are equalAngles in a triangle add up to 180°**OR**The tangent to a circle is perpendicular (90°) to the radius (diameter) Base angles of an isosceles triangle are equalAngles in a triangle add up to 180°Angles on a straight line add up to 180°**OR**The tangent to a circle is perpendicular (90°) to the radius (diameter) Base angles of an isosceles triangle are equalThe exterior angle of a triangle is equal to the sum of the interior opposite angles |
| 18 |  |  | *n*2 + 1 | 3 | P1 for process to find common second differencesP1 for *n*2 as part of an algebraic expressionA1 oe |
| 19 |  | *CAD* = *ACB* = 90° (given)*ABC* = *ABD* (common)*ADC* = 180 – 90 – *ABD* = 180 – 90 – *ABC* = *BAC* *ABD* is similar to *CBA* (AAA) | Proof | 3 | C1 one correct relevant statementC1 all correct relevant statementsC1 correct conclusion with reasons |
| 20 |  |  | *x* = 3, *y* = 3*x* = − 4.2, *y* = − 0.6 | 5 | M1 for (2*y* – 3)2 + *y*2 = 18M1 for expansion of bracket: e.g. 4*y*2 – 6*y* – 6*y* + 9M1 for quadratic ready for solving, e.g. 5*y*2 – 12*y* – 9 = 0M1 for factorising, e.g. (5*y* + 3)(*y* – 3) = 0 oeA1 for *x* = 3, *y* = 3 and *x* = –4.2, *y* = –0.6 |
| 21 |  |  |   | 3 | M1 for intention to multiply numerator and denominator by M1 for correct expansion of either  or , at least 3 terms correct ignoring signs or 4 correct terms ignoring signs.A1 for fully correct working leading to  |
| 22 | (a) |  | *y* = −f(*x*) | 1 | B1 cao |
|  | (b) |  | *y* = g(*x*) + 1 | 1 | B1 cao |
|  | (c) |  | (180,−1) | 1 | B1 cao |
| 23 |  |  |  | 3 | P1 for 20 ÷ 5 or correct scale on FD axis, or use of area.P1 for correctly method to find area of remaining bars, allow one errorA1 for  oe |
| 24 |  |  |  | 3 | P1 for  or P1 for  + A1 for  oe |