**AQA**

ASSESSMENT and

QUALIFICATIONS

ALLIANCE

**General Certificate of Secondary Education**

# Mathematics 4302
*Specification B*

**Module 5  Paper 1  Tier F    43005/1F**

# Mark Scheme

*2008 examination - November series*

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this Mark Scheme are available to download from the AQA Website: www.aqa.org.uk

**The following abbreviations are used on the mark scheme:**

| | |
|---|---|
| **M** | Method marks awarded for a correct method. |
| **A** | Accuracy marks awarded when following on from a correct method. It is not necessary always to see the method. This can be implied. |
| **B** | Marks awarded independent of method. |
| **M dep** | A method mark which is dependent on a previous method mark being awarded. |
| **ft** | Follow through marks. Marks awarded for correct working following a mistake in an earlier step. |
| **SC** | Special Case. Marks awarded for a common misinterpretation which has some mathematical worth. |
| **oe** | Or equivalent. |
| **eeoo** | Each error or omission. |

## MODULE 5      FOUNDATION TIER      43005/1F
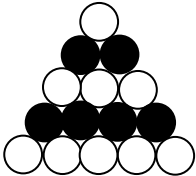
| 1(a) | 2305 | B1 | Ignore pm **:** **,** **.** spaces |
|---|---|---|---|
| 1(b)(i) | 18 minutes to 11 or 2242<br>or 1042 (pm) | B1 | oe<br>Ignore pm **:** **,** **.** spaces |
| 1(b)(ii) | Minute hand between 8 and 9 **and**<br>hour hand between 10<br>and 11 exclusive<br>or their time shown on clock | B1 ft | ft using same principle<br>Allow within 2 minutes<br>Allow minute hand equal or longer<br>than hour hand<br>Hour hand not pointing at 10 or 11 |

| 2(a) | Kite drawn | B1 | Do not allow rhombus |
|---|---|---|---|
| 2(b) | Good attempt to count squares<br>or 6 + 1.5 + 1.5<br>or 3 × 3 | M1 | Answer between 6 and 9 exclusive<br>or a number seen between 6 and 9 |
|  | 9 | A1 | $9^2$ without $cm^2$      M1A1 |
|  | $cm^2$ | B1 | Units mark |
| 2(c) | Correct reflection | B2 | B1 for correct reflection but in<br>wrong position |

| 3(a)(i) | 10 | B1 | |
|---|---|---|---|
| 3(a)(ii) | 60 | B1 | |
| 3(a)(iii) | 120 | B1 | |
| 3(b)(i) | 64 and/or 81 | B1 | |
| 3(b)(ii) | 121 or 144 or 169 or 196<br>or 225 | B1 | 256 or 289 324 or 361 or 400<br>or 441 or 484 or 529 or 576<br>or 625 or 10000 |
| 3(c) | Use of common denominator<br>or converts to decimals | M1 | eg $\frac{6}{8}$<br><br>or $\frac{10}{16}$ and $\frac{12}{16}$<br><br>or 0.6(25) and 0.75<br>Accept shading if clear<br>(equal size shapes)<br>oe |
|  | States $\frac{3}{4}$ | A1 | Must see method |

| 4(a) | *B, D, E* and *F* | B2 | B1 for two or three correct (and no more than one incorrect) |
| 4(b) | *B* and *D* | B1 | |
| 4(c) | *A* and *C* | B1 | |
| 4(d) | False<br>True<br>False | B1<br>B1<br>B1 | |

| 5(a)(i) |  | B2 | B1 for correct pattern without shading or shading incorrect<br>B1 for correct shading but missing top circle |
| 5(a)(ii) | 6 | B1 | |
| | 9 | B1 | |
| | 15 and 21 | B1 ft | 9 + their 6<br>12 + their 9 |
| 5(b) | 9 | B1 | |
| | 27 or their 9 × 3 | B1 ft | Answers in correct order |
| 5(c) | 11 | B1 | Not 7, 11 |
| | 43 or their 11 × 4 − 1 | B1 ft | Answers in correct order |
| 5(d) | 1, 3, 5, 7 | B2 | B1 for 3 terms correct<br>eg  3  5  7  9<br>  −1  1  3  5<br>    0  3  5  7<br>    1  4  5  7<br>B1 for 1, 3<br>B0 for 1  2  3  4<br>B0 for 1  4  6  8 |

| 6(a) | F and N | B2 | B1 for one correct (and one incorrect) or two correct and one incorrect |
| 6(b) | N and X | B2 | B1 for one correct (and one incorrect) or two correct and one incorrect |

| 7(a) | 5 | B1 | 5.0, 5.00 |
|---|---|---|---|
| 7(b) | Attempt to convert one measurement to common units | M1 | eg<br>(5 m) (2 m) 3 m<br>(500 cm) 200 cm 300 cm<br>0.005 km 0.002 km (0.003 km)<br>Note: $2 \times 100 = 20$      M1A0 |
| | 2 m 0.003 km 500 cm | A1 | Accept any units if order correct<br>Accept all in same units |
| 7(c)(i) | Bottom box only ticked | B1 | There is not enough water to fill the glasses |
| 7(c)(ii) | Give a correct conversion or valid reason | B1 dep | eg 1 litre ≈ 1.75 pints<br>1 litre is less than 2 pints<br>1 pint = 600 ml<br>1 pint = 568 ml<br>Allow 550 - 600 inclusive<br>1 gallon = 8 pints and<br>1 gallon = 4.5 litres<br>1 pint is more than half a litre<br>Do not accept 8 pints is more than 4 litres |

| 8(a) | 30 - 31 inclusive | B1 | |
|---|---|---|---|
| 8(b) | 162 - 166 inclusive | B1 | |
| 8(c) | their (b) $\times$ 4 | M1 | oe (324 - 332) $\times$ 2<br>Method is for a reading in tolerance $(\pm 2) \times$ correct scale factor |
| | 648 - 664 | A1 ft | Answer in range scores M1A1 |

| 9(a) | $11a - 8b - 9$ | B3 | B1 for each term<br>Do not accept further working<br>Further working is equivalent to an incorrect term |
|---|---|---|---|
| 9(b) | $4 \times 8 - 5 \times -3 - 2 \times \frac{1}{2}$ | M1 | Allow one error |
| | $32 + 15 - 1$ | A1 | |
| | 46 | A1 | |
| 9(c) | $6x - 2x = 7 - 9$ | M1 | $4x + 2 = 0$ |
| | $4x = -2$ | A1 | oe $-4x = 2$ |
| | $-\frac{1}{2}$ | A1 | oe $-\frac{2}{4}$   $-0.5$<br>Ignore further working |
| 9(d) | 45 | B1 | |

| 10(a) | 360 – 40  or  160 × 2 | M1 | oe<br>Accept 40 seen as acute < next to *x* |
|---|---|---|---|
| | 320 | A1 | |
| 10(b) | 180 – 320 ÷ 2<br>or  180 – 160<br>or  40 ÷ 2 | M1 | Accept 20 seen on diagram either<br>opposite to *y* in parallelogram<br>or alternate to *y* |
| | 20 | A1 | |

| 11(a) | $t^9$ | B1 | |
|---|---|---|---|
| 11(b) | $p^4$ | B1 | |
| 11(c)<br>(i) | States answer should be $2^6$ or says 2 should be power 1 | B1 | Should have added the powers |
| 11(c)<br>(ii) | $3^5$ | B1 | |

| 12(a) | 4 cm | B1 | | |
|---|---|---|---|---|
| 12(b) | 5 × 200 | M1 | or  1440 ÷ 5 | 540 ÷ 5 |
| | 1440 – 1000  or  440 | M1 dep | 288 | 200 – 108 |
| | 440 ÷ 5 | M1 dep | 288 – 200 | 180 – 92 |
| | 88 | A1 | | |