

Algebra: Quadratics, Rearranging Formulae and Identities

Calculator 20 minute test 3

| Q | Answer | Mark | Comments |
|---|--|------|---|
| 1 | $x^2 - 5x - 2x - 10$ | M1 | Expands one bracket correctly. Sight of $x^2 - 5x$ or $2x + 10$ or $-2x - 10$ |
| | $x^2 - 7x - 10$ | A1 | |
| 2 | $3 \times 7^2 + 2$ | M1 | Substitutes $x = 7$ |
| | 51 | A1 | |
| 3(a) | Subtract 7 | B1 | Or uses symbols |
| | Multiply by 2 | B1 | Or uses symbols |
| 3(b) | Multiplies by 2 | B1 | Or uses symbols |
| | Subtracts 14 | B1 | Or uses symbols |
| NB: answers to 3(b) given in 3(a) or vice versa are acceptable | | | |
| 4 | $2.5 \times 6.3 = 15.75$ so 16m^2 | M1 | Finds area of a rectangle <i>and rounds correctly</i> . |
| | $C = 4 \times \text{their } 16 + 25$ | M1 | Substitutes $A = 16$ |
| | $C = 89$ | A1ft | ft M0M1 |
| 5 | $d^2 = 9 - 16a$ | M1 | Isolates d^2 |
| | $d = \sqrt{9 - 16a}$ | A1 | |
| 6 | $(x^2 + 6x - 6x - 36) - 3$ | M1 | Expands brackets to give four terms or $(x^2 - 36) - 3$ |
| | $x^2 - 39$ | A1 | |
| 7 | $(x \pm 11)(x \pm 9)$ | M1 | Factorises using correct numbers |
| | $(x - 11)(x + 9)$ | A1 | |

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| 8 | $y^2 - 4y - 21y + 84$ | M1 | Expands either set of brackets to give four terms. Allow one error. |
| | $y^2 - 25y + 84$ | A1 | |