

# Delta 3 – Unit 6 Revision Answers

Q1.

| PAPER: 5MB3H_01 |                                                   |               |      |                                                                                                                                                    |
|-----------------|---------------------------------------------------|---------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Question        | Working                                           | Answer        | Mark | Notes                                                                                                                                              |
| (a)             | $x$ -1 0 1 2 3 4<br>5<br>$y$ 9 3 -1 -3 -3 -1<br>3 | 9, -3, -1     | 2    | B2 for a fully correct table of values<br>(B1 for at least one correct extra entry)                                                                |
| (b)             |                                                   | Correct graph | 2    | B1 (dep on at least B1 in (a)) for all of their points correctly plotted<br>B1 (dep on previous B1) for smooth curve through all 7 of their points |
| (c)             |                                                   | 0.7, 4.3      | 2    | B1 for an answer rounding to 0.7 or ft their graph<br>B1 for an answer rounding to 4.3 or ft their graph                                           |

Q2.

| 5MB3F_01 November 2015 |         |               |      |                                                                                     |
|------------------------|---------|---------------|------|-------------------------------------------------------------------------------------|
| Question               | Working | Answer        | Mark | Notes                                                                               |
| (a)                    |         | 0, 4, 3, -5   | 2    | M1 for one correct value, could be taken from graph<br>A1 cao                       |
| (b)                    |         | correct curve | 2    | M1 for at least 4 points plotted correctly from table<br>A1 for correct curve drawn |

Q3.

| Question | Working | Answer        | Mark | Notes                                                                                                                                                   |
|----------|---------|---------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| (a)      |         | -1, 1, -1     | 2    | B2 for all correct<br>(B1 for 1 or 2 correct)                                                                                                           |
| (b)      |         | Correct graph | 2    | M1 ft for 4 or 5 points from their table plotted correctly, provided at least B1 awarded in part (a)<br>A1 for a fully correct graph (no line segments) |

Q4.

| Question |     | Working                                                                                                                                                                                                      |     |   |      |     |     |   | Answer | Mark | Notes                                                                         |   |   |   |   |   |   |   |   |     |   |      |     |     |               |   |                                                             |
|----------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---|------|-----|-----|---|--------|------|-------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|-----|---|------|-----|-----|---------------|---|-------------------------------------------------------------|
|          | (a) | <table><tr><td>x</td><td>0.5</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr><tr><td>y</td><td>6</td><td>3</td><td>1.5</td><td>1</td><td>0.75</td><td>0.6</td><td>0.5</td></tr></table> |     |   |      |     |     |   | x      | 0.5  | 1                                                                             | 2 | 3 | 4 | 5 | 6 | y | 6 | 3 | 1.5 | 1 | 0.75 | 0.6 | 0.5 | Correct table | 2 | M1 2 or 3 entries correct<br>A1 all 4 table entries correct |
|          | x   | 0.5                                                                                                                                                                                                          | 1   | 2 | 3    | 4   | 5   | 6 |        |      |                                                                               |   |   |   |   |   |   |   |   |     |   |      |     |     |               |   |                                                             |
| y        | 6   | 3                                                                                                                                                                                                            | 1.5 | 1 | 0.75 | 0.6 | 0.5 |   |        |      |                                                                               |   |   |   |   |   |   |   |   |     |   |      |     |     |               |   |                                                             |
|          | (b) |                                                                                                                                                                                                              |     |   |      |     |     |   | Graph  | 2    | M1 (dep on M1) for 6 or 7 points plotted from table<br>A1 correct graph drawn |   |   |   |   |   |   |   |   |     |   |      |     |     |               |   |                                                             |

Q5.

| Question | Answer  | Mark       | Mark scheme                      | Additional guidance |
|----------|---------|------------|----------------------------------|---------------------|
|          | B C D A | B2<br>(B1) | cao<br>for two or three correct) |                     |

Q6.

| PAPER: 5MB3H_01 |         |                                      |      |                                                                                          |
|-----------------|---------|--------------------------------------|------|------------------------------------------------------------------------------------------|
| Question        | Working | Answer                               | Mark | Notes                                                                                    |
| (a)             |         | -3 -2 -1 0 1 2 3<br>-5 8 9 4 -1 0 13 | 2    | B2 for all 3 correct values<br>(B1 for 2 correct values)                                 |
| (b)             |         |                                      | 2    | M1 (dep on B1) for plotting at least 6 values from their table<br>A1 for a correct graph |

Q7.

| Question | Working | Answer          | Mark | Notes                                                                                                                                                                                                                                                                                            |
|----------|---------|-----------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |         | $x = -8, x = 3$ | M1   | for factorisation or for substitution into quadratic formula $(x \pm a)(x \pm b)$ where product of $a$ and $b = 24$ , eg $(x \pm 4)(x \pm 6)$<br>or difference of $a$ and $b = 5$ , eg $(x \pm 2)(x \pm 7)$<br>$\frac{-5 \pm \sqrt{5^2 - 4 \times 1 \times -24}}{2}$ oe (condone one sign error) |
|          |         |                 | M1   | for $(x + 8)(x - 3)$ or for $\frac{-5 \pm \sqrt{121}}{2}$ oe                                                                                                                                                                                                                                     |
|          |         |                 | A1   | cao                                                                                                                                                                                                                                                                                              |

Q8.

| Question | Working              | Answer         | Mark | Notes                                                                                                 |
|----------|----------------------|----------------|------|-------------------------------------------------------------------------------------------------------|
| (a)      |                      | $\pm 6$        | M1   | for one value (6 or $-6$ ) or $\sqrt{36}$ or an embedded answer eg $2 \times 6^2 = 72$                |
|          |                      |                | A1   | $\pm 6$                                                                                               |
| (b)      | $6x^2 - 4x + 3x - 2$ | $6x^2 - x - 2$ | M1   | for at least 3 terms correct out of a maximum of 4 from expansion, or 4 terms correct ignoring signs. |
|          |                      |                | A1   | cao                                                                                                   |
| (c)      |                      | $(x + 3)^2$    | B1   | for $(x + 3)^2$ or $(x + 3)(x + 3)$                                                                   |

Q9.

| Paper 1MA1: 3F |         |                  |                                                   |
|----------------|---------|------------------|---------------------------------------------------|
| Question       | Working | Answer           | Notes                                             |
|                |         | $(x - 1)(x + 4)$ | M1 $(x \pm 1)(x \pm 4)$<br>A1 $(x - 1)(x + 4)$ oe |

Q10.

|  |  | Working | Answer  | Mark | Notes                                                                                                                                                                                                                                                                                                                                                     |
|--|--|---------|---------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  |         | 0.5, -3 | 3    | <p>M1 for <math>(2x \pm 1)(x \pm 3)</math><br/> M1 for <math>(2x - 1)(x + 3)</math><br/> A1 cao</p> <p>OR</p> <p>M1 for <math>\frac{-5 \pm \sqrt{5^2 - 4 \times 2 \times -3}}{2 \times 2}</math> allow sub. of c<br/> <math>= \pm 3</math><br/> M1 for <math>\frac{-5 \pm \sqrt{49}}{4}</math><br/> A1 cao</p> <p>NB: any other method put in review.</p> |