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# GCSE Mathematics

## Graphical Solutions to Equations

Mark Scheme - Higher Tier | Grades 6-8

M = method mark, A = accuracy mark (dependent on the preceding M mark), B = independent mark.

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## Edexcel-style questions

**Q1** Grade 6 Edexcel style

**Total: 2**

| Part | Mark scheme              | Marks |
|------|--------------------------|-------|
| (a)  | lines cross at one point | M1    |
| (a)  | $x = 2, y = 3$           | A1    |

**Q2** Grade 6 Edexcel style

**Total: 2**

| Part | Mark scheme                                | Marks |
|------|--------------------------------------------|-------|
| (a)  | curve meets the line $y = 5$ at two points | M1    |
| (a)  | $x = -2$ or $x = 4$                        | A1    |

**Q3** Grade 7 Edexcel style

**Total: 2**

| Part | Mark scheme                        | Marks |
|------|------------------------------------|-------|
| (a)  | curve meets the line at two points | M1    |
| (a)  | $x = -1$ or $x = 3$                | A1    |

**Q4** Grade 7 Edexcel style

**Total: 2**

| Part | Mark scheme             | Marks |
|------|-------------------------|-------|
| (a)  | $x^2 - 3x + 1 = 2x - 5$ | M1    |
| (a)  | $x^2 - 5x + 6 = 0$      | A1    |

**Q5** Grade 8 Edexcel style

**Total: 2**

| Part | Mark scheme                                             | Marks |
|------|---------------------------------------------------------|-------|
| (a)  | curve meets the line at two points                      | M1    |
| (a)  | $x \approx 2.3$ or $x \approx -1.3$ (accept $\pm 0.2$ ) | A1    |

## AQA-style questions

**Q6** Grade 6 AQA style

**Total: 2**

| Part | Mark scheme              | Marks |
|------|--------------------------|-------|
| (a)  | lines cross at one point | M1    |
| (a)  | $x = 3, y = 5$           | A1    |

**Q7** Grade 6 AQA style

**Total: 2**

| Part | Mark scheme                                | Marks |
|------|--------------------------------------------|-------|
| (a)  | curve meets the line $y = 1$ at two points | M1    |
| (a)  | $x = 0$ or $x = 4$                         | A1    |

**Q8** Grade 7 AQA style

**Total: 2**

| Part | Mark scheme                        | Marks |
|------|------------------------------------|-------|
| (a)  | curve meets the line at two points | M1    |
| (a)  | $x = 1$ or $x = 4$                 | A1    |

**Q9** Grade 7 AQA style

**Total: 2**

| Part | Mark scheme             | Marks |
|------|-------------------------|-------|
| (a)  | $x^2 + 2x - 4 = 3x + 2$ | M1    |
| (a)  | $x^2 - x - 6 = 0$       | A1    |

**Q10** Grade 8 AQA style

**Total: 2**

| Part | Mark scheme                                             | Marks |
|------|---------------------------------------------------------|-------|
| (a)  | curve meets the line at two points                      | M1    |
| (a)  | $x \approx 2.8$ or $x \approx -1.8$ (accept $\pm 0.2$ ) | A1    |

## OCR-style questions

**Q11** Grade 6 OCR style**Total: 2**

| Part | Mark scheme              | Marks |
|------|--------------------------|-------|
| (a)  | lines cross at one point | M1    |
| (a)  | $x = 2, y = 5$           | A1    |

**Q12** Grade 6 OCR style**Total: 2**

| Part | Mark scheme                                | Marks |
|------|--------------------------------------------|-------|
| (a)  | curve meets the line $y = 7$ at two points | M1    |
| (a)  | $x = -4$ or $x = 2$                        | A1    |

**Q13** Grade 7 OCR style**Total: 2**

| Part | Mark scheme                        | Marks |
|------|------------------------------------|-------|
| (a)  | curve meets the line at two points | M1    |
| (a)  | $x = -1$ or $x = 4$                | A1    |

**Q14** Grade 7 OCR style**Total: 2**

| Part | Mark scheme             | Marks |
|------|-------------------------|-------|
| (a)  | $x^2 - 5x + 3 = -x + 9$ | M1    |
| (a)  | $x^2 - 4x - 6 = 0$      | A1    |

**Q15** Grade 8 OCR style**Total: 2**

| Part | Mark scheme                                             | Marks |
|------|---------------------------------------------------------|-------|
| (a)  | curve meets the line at two points                      | M1    |
| (a)  | $x \approx 2.4$ or $x \approx -0.4$ (accept $\pm 0.2$ ) | A1    |

## Teachably-style questions

**Q16** Grade 6 Teachably style

**Total: 2**

| Part | Mark scheme              | Marks |
|------|--------------------------|-------|
| (a)  | lines cross at one point | M1    |
| (a)  | $x = 3, y = 1$           | A1    |

**Q17** Grade 6 Teachably style

**Total: 2**

| Part | Mark scheme                                | Marks |
|------|--------------------------------------------|-------|
| (a)  | curve meets the line $y = 5$ at two points | M1    |
| (a)  | $x = 0$ or $x = 6$                         | A1    |

**Q18** Grade 7 Teachably style

**Total: 2**

| Part | Mark scheme                        | Marks |
|------|------------------------------------|-------|
| (a)  | curve meets the line at two points | M1    |
| (a)  | $x = -2$ or $x = 3$                | A1    |

**Q19** Grade 7 Teachably style

**Total: 2**

| Part | Mark scheme            | Marks |
|------|------------------------|-------|
| (a)  | $x^2 + 4x - 1 = x + 5$ | M1    |
| (a)  | $x^2 + 3x - 6 = 0$     | A1    |

**Q20** Grade 8 Teachably style

**Total: 2**

| Part | Mark scheme                                             | Marks |
|------|---------------------------------------------------------|-------|
| (a)  | curve meets the line at two points                      | M1    |
| (a)  | $x \approx 3.2$ or $x \approx -2.2$ (accept $\pm 0.2$ ) | A1    |

**END OF PAPER**

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