MASTER MATHS GCSE

GCSE Mathematics 9-1

# Priority of Operations (BIDMAS)

(Non-Calculator)

**Mark Scheme**

**Total available marks: 38**

| Q | Answer | Working | Mark |
|---|---|---|---|
| **1** | 23 | Multiply first: $4 \times 5 = 20$<br>$3 + 20 = 23$ | 1 |
| **2** | 17 | Divide first: $12 \div 4 = 3$<br>$20 - 3 = 17$ | 1 |
| **3** | 84 | Power first: $4^2 = 16$<br>$100 - 16 = 84$ | 1 |
| **4** | 20 | Multiply first: $6 \times 2 = 12$<br>$12 + 8 = 20$ | 1 |
| **5** | 4 | Divide first: $18 \div 3 = 6$<br>$6 - 2 = 4$ | 1 |
| **6** | 18 | Power first: $3^2 = 9$<br>$2 \times 9 = 18$ | 1 |
| **7** | 19 | Multiply first: $6 \times 3 = 18$<br>$5 + 18 - 4 = 19$ | 2 |
| **8** | 12 | Multiply first: $4 \times 5 = 20$<br>$30 - 20 + 2 = 12$ | 2 |
| **9** | 15 | Divide and multiply from left to right: $24 \div 6 = 4$,<br>$4 \times 2 = 8$<br>$7 + 8 = 15$ | 2 |
| **10** | 17 | Power first: $3^2 = 9$<br>Multiply: $4 \times 2 = 8$<br>$9 + 8 = 17$ | 2 |
| **11** | 32 | Power first: $3^2 = 9$<br>Multiply: $2 \times 9 = 18$<br>$50 - 18 = 32$ | 2 |
| **12** | 19 | Root first: $\sqrt{81} = 9$<br>Multiply: $5 \times 2 = 10$<br>$9 + 10 = 19$ | 2 |
| **13** | 11 | Roots and powers first: $\sqrt{25} = 5$, $3^2 = 9$<br>Multiply: $4 \times 5 = 20$<br>$20 - 9 = 11$ | 2 |
| **14** | 16 | Power first: $2^2 = 4$<br>Divide: $60 \div 4 = 15$<br>$15 + 1 = 16$ | 2 |

| Q | Answer | Working | Mark |
|---|---|---|---|
| **15** | $(2 + 3) \times 4 = 20$ | With brackets: $5 \times 4 = 20$<br>(Without brackets it would be $2 + 12 = 14$) | 1 |
| **16** | $(10 - 6) \div 2 = 2$ | With brackets: $4 \div 2 = 2$ | 1 |
| **17** | $8 \times (5 - 3) = 16$ | With brackets: $8 \times 2 = 16$ | 1 |
| **18** | $4 + 8 \div (2 + 2) = 6$ | With brackets: $8 \div 4 = 2$<br>$4 + 2 = 6$ | 1 |
| **19** | $(20 - 3^2) \times 2 = 22$ | With brackets: $20 - 9 = 11$<br>$11 \times 2 = 22$ | 1 |
| **20** | William | Multiply first: $6 \times 5 = 30$, then $2 + 30 = 32$<br>Sam added first ($2 + 6 = 8$, $8 \times 5 = 40$), which is the wrong order<br>(1 mark for the correct working, 1 mark for William) | 2 |
| **21** | Jack | Divide first: $4 \div 2 = 2$, then $12 - 2 = 10$<br>Priya subtracted first ($12 - 4 = 8$, $8 \div 2 = 4$), which is the wrong order<br>(1 mark for the correct working, 1 mark for Jack) | 2 |
| **22** | Tom | Power first: $2^2 = 4$, then $4 \times 5 = 20$, then $3 + 20 = 23$<br>Ella added first ($3 + 2 = 5$, $5^2 = 25$, $25 \times 5 = 125$), which is the wrong order<br>(1 mark for the correct working, 1 mark for Tom) | 2 |
| **23** | Max | Divide first: $18 \div 3 = 6$, then $6 + 6 = 12$<br>Leah added first ($3 + 6 = 9$, $18 \div 9 = 2$), which is the wrong order<br>(1 mark for the correct working, 1 mark for Max) | 2 |
| **24** | $5 \times 3 + 2$ | $5 + 3 \times 2 = 5 + 6 = 11$<br>$5 \times 3 + 2 = 15 + 2 = 17$<br>$17 > 11$ | 2 |
| **25** | $4 + 3 \times 2 = 10$ | $3 \times 2 = 6$<br>$4 + 6 = 10$ | 1 |

| **Total available marks for this paper** | **38** |
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