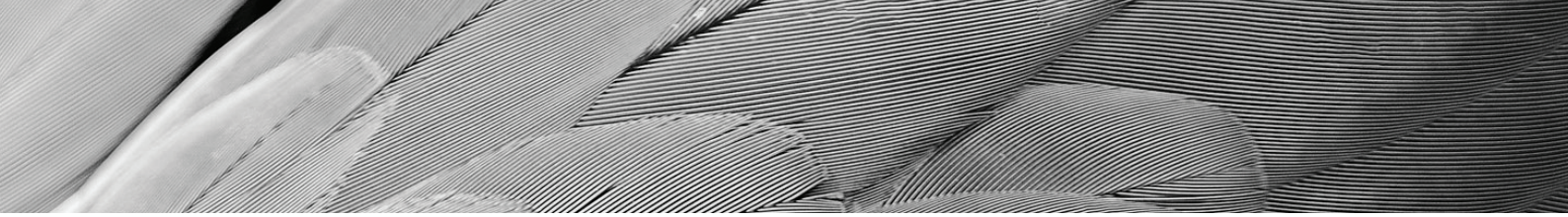


SET Y

# Level 3 Certificate
# MATHEMATICAL STUDIES

## Paper 2B

# Mark scheme



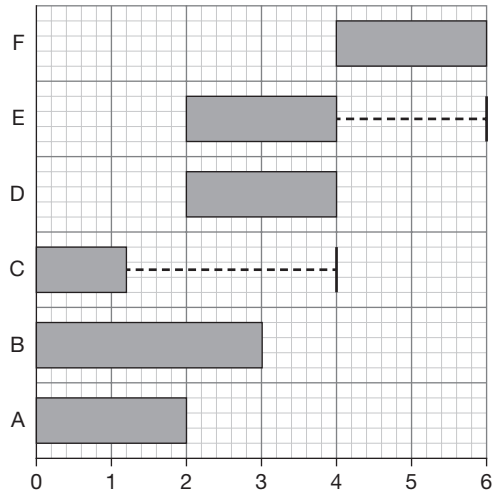
OXFORD

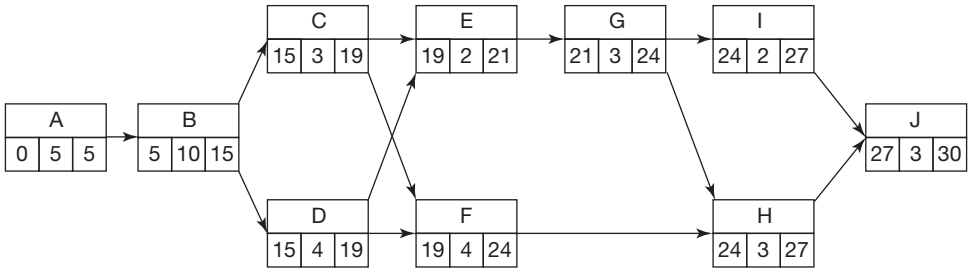
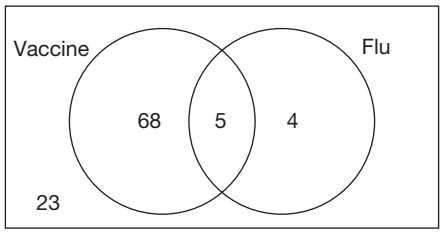
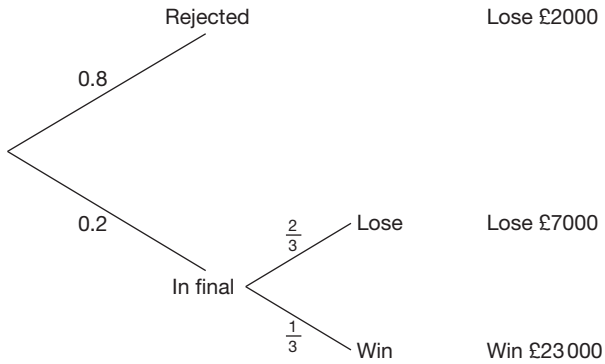
# Glossary

The marking scheme is given to indicate roughly where marks are likely to be awarded. The scheme does not necessarily reflect the precise allocation of marks that would be used by AQA Examining teams.

| | |
|---|---|
| **M** | Method marks: awarded for evidence of a correct method which could lead to a correct answer. |
| **A** | Accuracy marks: awarded for a correct answer that follows from a correct method. To get these marks a correct method must be explicitly or implicitly shown; a correct answer alone gets no marks. |
| **B** | Marks that are awarded independently of any method. |
| **ft** | Follow through: marks awarded for an answer that uses correct working following a mistake in an earlier step. |

# Mark scheme Paper 2B

<table>
<tr><th>Question</th><th>Answer</th><th>Mark</th></tr>
<tr><td>1 (a)</td><td>The graph shows a cumulative total, which is certain to rise.</td><td>B1</td></tr>
<tr><td></td><td>The headline confuses this with the rate of bankruptcies, which is actually falling.</td><td>B1</td></tr>
<tr><td>1 (b)</td><td>We have successfully reduced the bankruptcy rate to 21 000 per year.</td><td>M1 A1</td></tr>
<tr><td>2</td><td>She is correct that her gross salary is roughly £400 per week.</td><td>B1</td></tr>
<tr><td></td><td>However, this will be used up as follows (for example).
<table>
<tr><th></th><th>£</th></tr>
<tr><td>Income tax</td><td>40</td></tr>
<tr><td>NI</td><td>30</td></tr>
<tr><td>Student loan repayment</td><td>0</td></tr>
<tr><td>Rail fare</td><td>80</td></tr>
<tr><td>Board and lodging</td><td>120</td></tr>
<tr><td>Saving</td><td>100</td></tr>
<tr><td>Total</td><td>370</td></tr>
</table></td><td>M1<br>A1<br>A1</td></tr>
<tr><td></td><td>With these figures, she is left only £30 per week for other expenses/entertainment.</td><td>A1</td></tr>
<tr><td>3 (a)</td><td>For example, “cheats taxpayer”, “sparked fury”, “flogged on the cheap”.</td><td>B1</td></tr>
<tr><td>3 (b)</td><td>45.8 – 32.4 – 6.2 = 7.2 (£ billion)</td><td>M1 A1</td></tr>
<tr><td>3 (c)</td><td>It will be the best deal for taxpayers.<br>It will support the British economy.<br>It is the judgement of the Bank of England.<br>It is the conclusion of Rothschilds.</td><td>B1 × 2</td></tr>
<tr><td>3 (d)</td><td>The Daily Mirror can justifiably claim that the first tranche of stock had been sold too cheaply.</td><td>M1 A1</td></tr>
<tr><td></td><td>However, George Osborne would be able to say that it was only the fact that the sale had taken place which had “improved the marketability” of the stock, as he had predicted. He would then be able to get better terms for the taxpayer in the future.</td><td>M1 A1</td></tr>
<tr><td>3 (e)</td><td>$\left(\frac{32.4}{0.81}\right)$ = 40 (£ billion)</td><td>M1 A1</td></tr>
<tr><td>4 (a)</td><td>Gantt chart (or cascade diagram).

</td><td>M1<br>A1<br>A1</td></tr>
<tr><td>4 (b)</td><td>C at time 3 hours</td><td>B1</td></tr>
<tr><td></td><td>E at time 4 hours</td><td>B1</td></tr>
</table>

| | | |
|---|---|---|
| **5 (a)** | $0.9 \times 0.8 \times 0$, $0.9 \times 0.2 \times 4$, $0.1 \times 0.8 \times 4$, $0.1 \times 0.2 \times 8$ | B1 × 3 |
| | Total = 1.2 | M1 A1 |
| **5 (b)** | This assumes that the chance of knocking down a fence is not affected by knocking down a previous fence. | B1 |
| | Psychologically, this is unlikely. | B1 |
| **6 (a)** |  | |
| | Network | M1 A1 |
| | Early times | M1 A1 |
| | Late times | M1 A1 |
| **6 (b)** | A B D E G H J, 30 days | B1 B1 |
| **7 (a)** |  | M1<br>A1<br>A1 |
| **7 (b)** | $\frac{5}{9}$ or 0.625 | B2 |
| **7 (c)** | Chance if not vaccinated $\frac{4}{27} \approx 14.8\%$ | M1 A1 |
| | Chance if vaccinated $\frac{5}{73} \approx 6.8\%$ | A1 |
| | The chance is slightly more than halved. | A1 |
| | However, this is based upon just one trial with very few people actually catching flu. | B1 |
| **8 (a)** |  | M1<br>M1 |
| | $-0.8 \times 2000 - 0.2 \times \frac{2}{3} \times 7000 + 0.2 \times \frac{1}{3} \times 23\,000 = -1000$ | M1 A1<br>A1 |
| | A loss of £1000 | A1 |
| **8 (b)** | Boost to prestige even if it does not win the competition. | B1 |
| | Clients might be concerned if it did not take part in prestigious competitions. | B1 |
| **8 (c)** | Might be unable to afford the heavy costs if it did not win. | B2 |