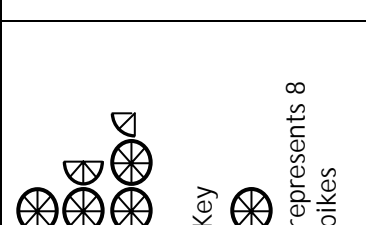


Unit 1 Foundation Tier: Statistics and Probability

| 5MB1F                              |   |  |      |  |
|------------------------------------|---|--|------|--|
| Question                           | Working   | Answer   | Mark | Additional Guidance  |
| 1.                                 | Gym $\text{H}\text{H}$ II    7<br>Tennis    IIII    4<br>Squash $\text{H}\text{H}$ 5<br>Swimming IIII    4            | 7, 4, 5, 4   | 2    | B2 for all frequencies correct<br>(B1 for 2 frequencies or 2 tallies correct or one tally with its frequency correct)  |
| (b)                                |   | 5  | 1    | B1 for 5 or '5' ft from table  |
| (c)                                |   | Gym  | 1    | B1 for gym or 'gym' ft from table  |
| <b>Total for Question: 4 marks</b> |   |  |      |  |
| 2.                                 | e.g. 0903 - 25 minutes =<br>0838<br>0903<br>0953<br>0953 + 3 hours = 1253<br>1300<br>1355<br>1355 + 25 minutes = 1420 | e.g.<br>0838<br>0903<br>0953<br>1300<br>1355<br>1420                                 | 5    | B1 for a correct time 25 minutes (or more) before the train departs e.g. 0838, 0938 ... or earlier<br>B1 for a correct departure time, e.g. 0903, 1003... with the associated correct arrival time 0953, 1053...<br>B1 for a correct departure time (3 hours after arrival) e.g. 1300, 1400...<br>B1 for a correct arrival time corresponding to the departure time, e.g. 1355, 1455...<br>B1 for a correct arrival time at home, e.g. 1420, 1520... |
| <b>Total for Question: 5 marks</b> |   |  |      |  |
| 3.                                 |   |  | 3    | B2 for all 3 days correct<br>(B1 for at least one day correct, i.e. one circle for Thursday<br>or one and a half circles or ft $1 \frac{1}{2}$ x 'Thursday' for Friday<br>or two and a quarter circles or ft $2 \frac{1}{4}$ x 'Thursday' for Saturday)<br>B1 for a correct key  |
| <b>Total for Question: 3 marks</b> |   |  |      |  |

| 5MB1F                       |         |                        |      |  |
|-----------------------------|---------|------------------------|------|--|
| Question                    | Working | Answer                 | Mark | Additional Guidance  |
| 4. (a)                      |         | Cross at 1             | 1    | B1 for cross at 1 (allow $\pm 2$ mm tolerance)             |
| (b)                         |         | Cross at $\frac{1}{4}$ | 1    | B1 for cross at $\frac{1}{4}$ (allow $\pm 5$ mm tolerance) |
| (c)(i)                      |         | $\frac{1}{4}$          | 2    | B1 for $\frac{1}{4}$ oe fraction                           |
| (ii)                        |         | 35                     |      | B1 for 35 or 35.0  |
| (d)                         |         | 1 – s                  | 1    | B1 cao   |
| Total for Question: 5 marks |         |                        |      |  |

| 5MB1F                              |   |   |      |  |
|------------------------------------|---|---|------|--|
| Question                           | Working   | Answer  | Mark | Additional Guidance  |
| 5.<br>OWC<br>(i)                   |   | Diagram or chart  | 4    | B1 for a key or suitable labels to identify boys and girls<br>B1 for 5 correct animal labels<br>B1 for a diagram or chart (combined or separate) set up for comparison, e.g. dual bar chart, back-to-back stem and leaf diagrams, pie charts, pictograms, vertical (stick) diagrams, etc<br>C1 fully correct diagram or chart QWC: Fully correct diagram or chart and all labelling is correct and clear |
| <b>Total for Question: 4 marks</b> |   |   |      |  |
| 6.                                 | (a)   | (A,1), (A,2),<br>(A,3), (B,1),<br>(B,2), (B,3),<br>(C,1), (C,2),<br>(C,3), (D,1),<br>(D,2), (D,3) | 2    | B2 for listing all 12 outcomes<br>(B1 for listing 6 outcomes, ignore repeats)  |
|                                    | (b)   | $\frac{1}{12}$  | 1    | B1 ft for $\frac{1}{12}$   |
| <b>Total for Question: 3 marks</b> |   |   |      |  |
| 7.<br>OWC<br>(i, ii,<br>iii)<br>FE | $2(215) + 3(128) = 814$<br>$2(211) + 3(134) = 824$<br>$2(223) + 3(119) = 803$ | Easy Plane<br><br>£803  | 6    | M1 for 2 x Adult + 3 x Child<br>M1 for using correct Adult and Child, i.e. (215, 128) or (211, 134) or (223, 119)<br>A2 for 814, 824 and 803<br>(A1 for one or two correct or for a correct 2x'Adult' + 3x'Child')<br>B1 for correct units, i.e. £ or pounds<br>C1 for Easy Plane identified QWC: Decision must be stated and total costs must be attributable   |
| <b>Total for Question: 6 marks</b> |   |   |      |  |
| 8.                                 | (a) $3 \times 6$  | 18  | 2    | M1 for $360 \div 60$ or 6 seen or 1 gold = 20<br>A1 cao  |
|                                    | (b)   | No and appropriate explanation  | 1    | C1 for 'No' and correct explanation, e.g. the pie charts only show that the proportions are the same<br>OR explains that she could be correct if the total number of medals is the same in each year<br>OR explains that we don't know if she is correct because the total number of medals in 2004 is not known.  |
| <b>Total for Question: 3 marks</b> |   |   |      |  |

| 5MB1F                              |  |   |      |   |
|------------------------------------|--|---|------|---|
| Question                           | Working  | Answer  | Mark | Additional Guidance   |
| 9.<br>OWC<br>(i, iii)              | 12, 20, 7, 28, 28, 35, 37<br><br>15, 18, 25, 27, 29, 31, 35,<br>35, 40 | Compares<br>1. medians/<br>means<br>2. ranges | 6    | B2 for median (boys) = 28 and median (girls) = 29 OR mean (boys) = 26.7 or better and mean (girls) = 28.3 or better<br><br>(B1 for one correct median/mean)<br>B2 for range (boys) = 25 and range (girls) = 25<br>(B1 for one correct range)<br>OR<br>B2 for fully correct diagram/chart to compare, e.g. back-to-back stem and leaf diagram, dual bar chart, vertical (stick) graphs, etc<br>(B1 for diagram chart with one error in presentation)<br><br>C1 for median (girls) > median (boys) oe<br>or mean (girls) > mean (boys) oe<br>or for range (boys) = range (girls) oe<br>C1 for comments relating to all working (ie<br>range/mean/median/charts dep on B4) QWC: Decisions should be<br>justified, and calculations attributable<br>SC If no marks scored B1 for a correct comparison |
| <b>Total for Question: 6 marks</b> |  |   |      |   |
| 10.                                | (a)  | Question +<br>response boxes                  | 2    | B2 for a suitable question with at least 3 non-overlapping response boxes (must include a time period)<br>(B1 for a suitable question with time period or non-overlapping response boxes)   |
|                                    | (b)  | Reason  | 1    | B1 for biased or all the students the same age or students (may) eat more sweets, etc   |
| <b>Total for Question: 3 marks</b> |  |   |      |   |
| 11.<br>OWC<br>(ii,<br>iii)         | 2.39 × 12 + 4.5<br><br>3.29/100 × 1000                                 | 33.18<br><br>32.90                            | 5    | M1 for '2.39 × 12' + 4.5 or diagram showing 2.39, 4.78, 7.17, ..., 28.68<br>oe (condone one error)<br>A1 cao<br>M1 for 3.29/100 × 1000 oe<br>A1 cao<br>C1 for Investment A identified QWC: Decision must be stated, with<br>calculations clearly attributable   |
| FE                                 |  |   |      |   |
| <b>Total for Question: 5 marks</b> |  |   |      |   |

| 5MB1F                              |                  | Working |  | Additional Guidance |  |  |      |     |     |      |      |  |    |  |    |        |   |  |   |  |  |  |  |   |    |
|------------------------------------|------------------|---------|--|---------------------|--|--|------|-----|-----|------|------|--|----|--|----|--------|---|--|---|--|--|--|--|---|----|
| Question                           | Answer           | Mark    |  |                     |  |  |      |     |     |      |      |  |    |  |    |        |   |  |   |  |  |  |  |   |    |
| 12.                                | 35               | 4       | <p>e.g.</p> <table border="1" style="display: inline-table; margin-right: 20px;"> <thead> <tr> <th></th> <th>Gu..</th> <th>Te.</th> <th>Ti.</th> <th>Tot.</th> </tr> </thead> <tbody> <tr> <td>Male</td> <td></td> <td>19</td> <td></td> <td>25</td> </tr> <tr> <td>Female</td> <td>5</td> <td></td> <td>4</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>7</td> <td>50</td> </tr> </tbody> </table> <p style="margin-left: 100px;">Male Female</p> <div style="display: flex; justify-content: center; align-items: center;"> </div> |                     |  |  | Gu.. | Te. | Ti. | Tot. | Male |  | 19 |  | 25 | Female | 5 |  | 4 |  |  |  |  | 7 | 50 |
|                                    | Gu..             | Te.     | Ti.  | Tot.                |  |  |      |     |     |      |      |  |    |  |    |        |   |  |   |  |  |  |  |   |    |
| Male                               |                  | 19      |  | 25                  |  |  |      |     |     |      |      |  |    |  |    |        |   |  |   |  |  |  |  |   |    |
| Female                             | 5                |         | 4  |                     |  |  |      |     |     |      |      |  |    |  |    |        |   |  |   |  |  |  |  |   |    |
|                                    |                  |         | 7  | 50                  |  |  |      |     |     |      |      |  |    |  |    |        |   |  |   |  |  |  |  |   |    |
| <b>Total for Question: 4 marks</b> |                  |         |  |                     |  |  |      |     |     |      |      |  |    |  |    |        |   |  |   |  |  |  |  |   |    |
| 13. (a)(i)                         | Line of best fit | 3       | B1 for line drawn between (190, 80), (190, 95) and (210, 105), (210, 120)<br>M1 for diff. y / diff. x<br>A1 for 0.5 – 2 or ft their line of best fit   |                     |  |  |      |     |     |      |      |  |    |  |    |        |   |  |   |  |  |  |  |   |    |
| (ii)                               | 1.25             |         |  |                     |  |  |      |     |     |      |      |  |    |  |    |        |   |  |   |  |  |  |  |   |    |
| (b)                                | 20%              | 2       | M1 for a horizontal line at 99 and a vertical line at 200 or 2 seen<br>A1 for 20% or $\frac{2}{10}$ or 0.2 oe  |                     |  |  |      |     |     |      |      |  |    |  |    |        |   |  |   |  |  |  |  |   |    |
| <b>Total for Question: 5 marks</b> |                  |         |  |                     |  |  |      |     |     |      |      |  |    |  |    |        |   |  |   |  |  |  |  |   |    |

| 5MB1F                       |  |        |      | Additional Guidance   |
|-----------------------------|--|--------|------|---|
| Question                    | Working  | Answer | Mark |   |
| 14.<br>FE                   | Score 30g: 10g: 5g<br><br>$200 \div 5 = 40$<br>$500 \div 10 = 50$<br>$2000 \div 30 = 66.7$ | 40     | 4    | M1 for $45 \div (6+2+1)$<br>A1 for SRF = 30, B = 10, C = 5<br>M1 for $200 \div 5$ or $500 \div 10$ or $2000 \div 30$<br>A1 cao<br><br>OR<br><br>M1 for $6 \times 200$ or $2 \times 200$ or $1 \times 200$ or $6 \times 500$ or $2 \times 500$ or $1 \times 500$ or $6 \times 2000$<br>or $2 \times 2000$ or $1 \times 2000$<br>A1 for SRF, B, C = 1200, 400, 200 or 1500, 500, 250 or 2000, 666.7,<br>33.3<br>M1 for $(1200 + 400 + 200) / 45$<br>A1 cao. |
| Total for Question: 4 marks |  |        |      |   |