**GCSE Mathematics (9-1) Practice Tests Set 8 – Paper 3F mark scheme**

| Question | | **Working** | | **Answer** | | **Mark** | | **Notes** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 |  | |  | 72.2 | | 1 | | B1 |  |
| 2 |  | | 18, 36, 54, 72, 90, 108, 126, 144, 162, 180, … | e.g. 18, 36 | | 1 | | B1 | Any two multiples of 18 |
| 3 |  | |  | 70 | | 1 | | B1 |  |
| 4 |  | |  |  | | 1 | | B1 | Correct brackets |
| 5 |  | |  | 8607 | | 1 | | B1 |  |
| ***Total 5 marks*** | | | | | | | | | |
| 6 | (i) | |  | | tangent | | 1 | B1 | Condone incorrect spelling if meaning clear. |
|  | (ii) | |  | | radius | | 1 | B1 | Condone incorrect spelling if meaning clear. |
|  | (iii) | |  | | chord | | 1 | B1 | Condone incorrect spelling if meaning clear. |
| ***Total 3 marks*** | | | | | | | | | |
| 7 | (a) | |  | | 3, 7, 5, 3, 2 | | 2 | B2 | For all correct frequencies  B1 for 3 or 4 correct frequencies or at least 3 correct tallies |
|  | (b) | |  | | 1 | | 1 | B1ft | From table |
|  | (c) | |  | |  | | 1 | B1ft | From table  oe |
| ***Total 4 marks*** | | | | | | | | | |

| Question | | | **Working** | | **Answer** | **Mark** | **Notes** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | (a) | |  | | Kazan | 1 | B1 | Accept −12 |
|  | (b) | |  | | 15 | 1 | B1 | Accept −15 |
|  | (c) | |  | | 11 | 1 | B1 |  |
| ***Total 3 marks*** | | | | | | | | |
| 9 | |  |  | | 6 | 4 | M1 | Correct method to find money left after taking away cost of rake or change |
|  | | M1 | Correct method to find money left after taking away cost of rake & change |
|  | | M1 | A fully correct method to find number of packets of seed |
| A1 |  |
| ***Total 4 marks*** | | | | | | | | |
| 10 | (i) | | |  | B | 1 | B1 | Accept  oe |
|  | (ii) | | |  | E | 1 | B1 | Accept oe |
|  | (iii) | | |  | F | 1 | B1 | Accept 1 |
|  | (iv) | | |  | A | 1 | B1 | Accept 0 |
| ***Total 4 marks*** | | | | | | | | |

| Question | | **Working** | | **Answer** | **Mark** | **Notes** | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 11 | (a) |  | | 130 | 1 | B1 |  |
|  | (b) |  | | 8 19 pm | 1 | B1 | Accept 20 19 |
| ***Total 3 marks*** | | | | | | | |
| 12 | (a) | | oe or | 57 | 2 | M1 | For a correct method to find angle for 1 throw or fraction of full circle |
| A1 |  |
|  | (b) | | oe or | 900 | 2 | M1 | For a correct method to find number of spins |
| A1 |  |
| ***Total 4 marks*** | | | | | | | |
| 13 | (a) |  | | 3*t* | 1 | B1 |  |
|  | (b) |  | | 15*pq* | 1 | B1 |  |
|  | (c) |  | | 4*y* − 20 | 1 | B1 |  |
|  | (d) |  | | 5.75 | 2 | M1 | Clearing fraction or dividing by 8 |
| A1 | oe 46/8 etc |
| ***Total 5 marks*** | | | | | | | |

| Question | | | **Working** | **Answer** | **Mark** | | **Notes** | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 14 | (a) | |  | 282 | 2 | | M1 | | Correctly substituting values into formula for area of trapezium |
| A1 | |  |
| ***Total 2 marks*** | | | | | | | | | |
| 15 | (a) | |  | 10 | 1 | | B1 | |  |
|  | (b) | | 7 ÷ 0.5 or 7 km in 0.5 hours oe | 14 | 2 | | M1 | |  |
| A1 | |  |
|  | (c) | |  | “Horizontal” line from(2 10, 16) to (2 50,16) “Diagonal” line from  (2 50, 16) to (3 50, 0) | 2 | | M1 | | For correct horizontal line or diagonal line with negative gradient to (3 50, 0) |
| A1 | | Fully correct graph |
| ***Total 5 marks*** | | | | | | | | | |
| 16 | |  | **or** | 18 | 3 | M1 | |  | |
| and | M1 | |  | |
| A1 | | cao | |
| ***Total 3 marks*** | | | | | | | | | |

| Question | | **Working** | **Answer** | **Mark** | **Notes** | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 17 |  | oe | 9 | 5 | M1 | oe | M2 for |
| oe | M1 |  |
| oe | M1 | A correct method to find 55% of  5 300 | |
|  | M1 | A correct method to find the number of weeks | |
| A1 |  | |
| ***Total 5 marks*** | | | | | | | |
| 18 |  |  | 2 , 20, 29 | 3 | M2 | for 3 number selected with at least two of the properties: mean = 17, median = 20, range = 27  else M1 with one of these properties | |
| A1 | in any order | |

**Alternative**

| 18 |  | 17 × 3 (= 51) | 2 , 20, 29 | 3 | M1 | method to find sum of 3 numbers |
| --- | --- | --- | --- | --- | --- | --- |
| 17 × 3 – 20 (=31) | M1 | method to find sum of smallest and largest numbers |
| A1 | in any order |

**Alternative**

| 18 |  | *x*, 20, *z*or *x*, *y* , *z* and *y* = 20 | 2 , 20, 29 | 3 | M1 | use of different letters with 20 shown as the middle value |
| --- | --- | --- | --- | --- | --- | --- |
| or oe  or  or | M1 | an equation for the sum or for the difference of the two unknown numbers |
|  | A1 | in any order |
| ***Total 3 marks*** | | | | | | |

| Question | | **Working** | | **Answer** | **Mark** | **Notes** | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 19 | (a)(i) |  | | 67 | 1 | B1 |  | |
|  | (ii) |  | | reason | 1 | B1 | dep on B1or a fully correct method shown in (i)  e.g. alternate angles are equal  or other fully correct method | |
|  | (b) | e.g. 180 – (67 + 60) or 120 – 67 or (180 – 67) – (180 – 120) or 113 – 60 or  180 – 67 = 60 + y or 113 = 60 + y or  120 – y = 67 | | 53 | 2 | M1 | Correct calculation for *y*  or correct equation in *y*,  or *BFC* = 60° and *BCF* = 67°  or *ABF* = 60° and *BCF* = 67°  or *ABF* = 60° and *ABC* = 113° | |
| A1 |  | |
| ***Total 4 marks*** | | | | | | | | |
| 20 |  | | (0 × 2) + 1 × 7 + 2 × 3 + 3 × 4 + 4 × 3 + 5 × 1 (0 +) 7 + 6 + 12 + 12 + 5 | 42 | 2 | M1 | For at least 4 correct products seen with the intention to add. | |
| A1 | SC B1 for 2.1 | |
| ***Total 2 marks*** | | | | | | | | |
| 21 |  | | × 8.50 or 0.06 × 8.50 or 0.51 or 51p | 9.01 | 3 | M1 |  | M2 for 1.06 × 8.50 oe |
| 8.50 + “0.51” | M1 | dep |
| A1 |  | |
| ***Total 3 marks*** | | | | | | | | |

| Question | | **Working** | **Answer** | **Mark** | **Notes** | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 22 | (a) |  | A correct enlargement in the correct position | 2 | M1 | Enlargment of given shape by SF 3 anywhere on grid or completely correct enlargement by SF 2 | |
| A1 | Fully correct | |
|  | (b) |  | Rotation P  *A*  (Centre) (0,0)  90° clockwise oe | 3 | B1  B1  B1 | *O* or origin  90°, 270° | If more than one transformation mentioned then no marks |
| ***Total 5 marks*** | | | | | | | |

| Question | | **Working** | **Answer** | **Mark** | **Notes** | |
| --- | --- | --- | --- | --- | --- | --- |
| 23 |  | cos *A* = (=0.6142) or sin *B* = (=0.6142) | 142 | 4 | M1 | cos *B* =, sin *A* = |
| or | M1 |  |
| *A* = 52.1° or *B* = 37.9° | A1 | 52° - 52.1° or 37.9° - 38°  **SC B1** If M0 M0 A0 award B1 for  52.1° or 37.9° not identified as *A* or as *B* |
| B1 ft | for an angle identified as *A* or *B*  Correct bearing (142 – 142.1) |
| ***Total 4 marks*** | | | | | | |
| 24 | (a) |  |  | 1 | B1 |  |
|  | (b) |  | 27*a*6*b*12 | 2 | B2 | fully correct  B1 for 2 of the three terms correct in a product. |
|  | (c) | 4*g* – 8*h* + 10*g* – 15*h* | 14*g* – 23*h* | 2 | M1 | Expanding brackets with 3 of 4 terms correct. |
| A1 | Fully correct |
|  | (d) |  | *y*² − 2*y* − 35 | 2 | M1 | Any 3 terms correct or 4 correct terms ignoring signs or  *y*² − 2*y* +/−... or ...−2*y* −35 |
| A1 |  |
| ***Total 7 marks*** | | | | | | |

| Question | | **Working** | **Answer** | **Mark** | **Notes** | |
| --- | --- | --- | --- | --- | --- | --- |
| 25 |  | eg 280 = 2 × 140 = 2 × 2 × 70 (= 2 × 2 × 2 × 35 = 2 × 2 × 2 × 5 × 7)  eg 280 = 10 × 28 = 2 × 5 × 28 (= 2 × 5 × 2 × 14 = 2 × 5 × 2 × 2 × 7) | 2 × 2 × 2 × 5 × 7 | 3 | M1 | |  | | --- | | for at least 2 correct steps in repeated factorisation (may be seen in a tree diagram) | |  | |
| 2, 2, 2, 5, 7 | A1dep | For all correct factors,  may include 1 |
| A1dep | Must see correct method  Accept 2³ × 5 × 7 |
| ***Total 3 marks*** | | | | | | |

**Practice Tests Set 8 – Paper 3F**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **Edexcel averages:** | **Mean score of students achieving grade** | | | | |
| **Question** | **Skills tested** | **Mean score** | **Max score** | **Mean %** | **ALL** | **C / 4** |  |  |  | **G / 1** |
| Q01 |  | 0.65 | 1 | 65 | 0.65 | 0.91 |  |  |  | 0.15 |
| Q02 |  | 0.28 | 1 | 28 | 0.28 | 0.49 |  |  |  | 0.10 |
| Q03 |  | 0.80 | 1 | 80 | 0.80 | 0.93 |  |  |  | 0.30 |
| Q04 |  | 0.69 | 1 | 69 | 0.69 | 0.82 |  |  |  | 0.35 |
| Q05 |  | 0.66 | 1 | 66 | 0.66 | 0.90 |  |  |  | 0.25 |
| Q06i |  | 0.45 | 1 | 45 | 0.45 | 0.65 |  |  |  | 0.15 |
| Q06ii |  | 0.71 | 1 | 71 | 0.71 | 0.91 |  |  |  | 0.10 |
| Q06iii |  | 0.33 | 1 | 33 | 0.33 | 0.51 |  |  |  | 0.10 |
| Q07a |  | 1.70 | 2 | 85 | 1.70 | 1.93 |  |  |  | 1.00 |
| Q07b |  | 0.53 | 1 | 53 | 0.53 | 0.78 |  |  |  | 0.00 |
| Q07c |  | 0.66 | 1 | 66 | 0.66 | 0.91 |  |  |  | 0.10 |
| Q08a |  | 0.94 | 1 | 94 | 0.94 | 0.99 |  |  |  | 0.55 |
| Q08b |  | 0.77 | 1 | 77 | 0.77 | 0.93 |  |  |  | 0.50 |
| Q08c |  | 0.78 | 1 | 78 | 0.78 | 0.93 |  |  |  | 0.40 |
| Q09 |  | 2.55 | 4 | 64 | 2.55 | 3.62 |  |  |  | 0.85 |
| Q010i |  | 0.60 | 1 | 60 | 0.60 | 0.85 |  |  |  | 0.10 |
| Q010ii |  | 0.65 | 1 | 65 | 0.65 | 0.89 |  |  |  | 0.10 |
| Q010iii |  | 0.77 | 1 | 77 | 0.77 | 0.91 |  |  |  | 0.15 |
| Q010iv |  | 0.90 | 1 | 90 | 0.90 | 0.98 |  |  |  | 0.20 |
| Q011a |  | 0.57 | 1 | 57 | 0.57 | 0.74 |  |  |  | 0.15 |
| Q011b |  | 0.40 | 1 | 40 | 0.40 | 0.63 |  |  |  | 0.20 |
| Q12a |  | 0.55 | 2 | 28 | 0.55 | 1.26 |  |  |  | 0.00 |
| Q12b |  | 0.51 | 2 | 26 | 0.51 | 1.13 |  |  |  | 0.00 |
| Q13a |  | 0.76 | 1 | 76 | 0.76 | 0.87 |  |  |  | 0.45 |
| Q13b |  | 0.76 | 1 | 76 | 0.76 | 0.87 |  |  |  | 0.55 |
| Q13c |  | 0.77 | 1 | 77 | 0.77 | 0.97 |  |  |  | 0.20 |
| Q13d |  | 1.17 | 2 | 59 | 1.17 | 1.79 |  |  |  | 0.10 |
| Q14 |  | 1.29 | 2 | 65 | 1.29 | 1.83 |  |  |  | 0.15 |
| Q15a |  | 0.76 | 1 | 76 | 0.76 | 0.92 |  |  |  | 0.25 |
| Q15b |  | 0.34 | 2 | 17 | 0.34 | 0.84 |  |  |  | 0.00 |
| Q15c |  | 1.22 | 2 | 61 | 1.22 | 1.70 |  |  |  | 0.05 |
| Q16 |  | 1.72 | 3 | 57 | 1.72 | 2.37 |  |  |  | 0.30 |
| Q17 |  | 2.50 | 5 | 50 | 2.50 | 3.99 |  |  |  | 0.05 |
| Q18 |  | 0.92 | 3 | 31 | 0.92 | 1.92 |  |  |  | 0.05 |
| Q19ai |  | 0.48 | 1 | 48 | 0.48 | 0.74 |  |  |  | 0.00 |
| Q19aii |  | 0.06 | 1 | 6 | 0.06 | 0.12 |  |  |  | 0.00 |
| Q19b |  | 0.43 | 2 | 22 | 0.43 | 0.79 |  |  |  | 0.00 |
| Q20 |  | 0.96 | 2 | 48 | 0.96 | 1.58 |  |  |  | 0.00 |
| Q21 |  | 1.54 | 3 | 51 | 1.54 | 2.46 |  |  |  | 0.15 |
| Q22a |  | 0.57 | 2 | 28 | 0.57 | 1.07 |  |  |  | 0.00 |
| Q22b |  | 0.91 | 3 | 30 | 0.91 | 1.50 |  |  |  | 0.25 |
| Q23 |  | 0.33 | 4 | 8 | 0.33 | 0.87 |  |  |  | 0.00 |
| Q24a |  | 0.79 | 1 | 79 | 0.79 | 0.94 |  |  |  | 0.35 |
| Q24b |  | 0.55 | 2 | 28 | 0.55 | 1.00 |  |  |  | 0.00 |
| Q24c |  | 1.19 | 2 | 60 | 1.19 | 1.64 |  |  |  | 0.35 |
| Q24d |  | 0.86 | 2 | 43 | 0.86 | 1.53 |  |  |  | 0.10 |
| Q25 |  | 1.48 | 3 | 49 | 1.48 | 2.32 |  |  |  | 0.05 |
|  |  | **39.81** | **80** | **50** | **39.81** | **58.23** |  |  |  | **9.20** |

**Suggested Grade Boundaries based on peformance of students in Summer 2018**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **5** | **4** | **3** | **2** | **1** |
| 66 | 50 | 34 | 17 | 9 |