| 1 |  |  | 3 squares shaded | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | **Total 1 mark** |

| 2 |  |  |  | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | **Total 1 mark** |

| 3 |  |  | 8*a* | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | **Total 1 mark** |

| 4 |  |  | 0.85 | 1 | B1 | cao |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | **Total 1 mark** |

| 5 |  |  | 3*w* | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | **Total 1 mark** |

| 6 |  | 0.32 × 450 (= 144) oe **or** (= 150)oe |  | 3 | M1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | 0.32 × 450 (= 144) oe **and** (= 150)oe |  |  | M1 |  |
|  |  |  | 144 **and** 150 **and** |  | A1 |  |
|  |  |  |  |  |  | **Total 3 marks** |

| 7 | (a) |  | 2.7 | 1 | B1 | condone 2.7 million |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | Malaysia | 1 | B1 | cao |
|  | (c) |  | Correct bar drawn | 1 | B1 | for correct bar at a height of 5.4 (within half small square)  allow any bar width or location (no gap required) condone stick at correct height. |
|  | (d) |  | Russia | 1 | B1 | cao |
|  |  |  |  |  |  | **Total 4 marks** |

| 8 |  | or  or eg |  | 2 | M1 | for writing a sum, and each fraction with a common denominator, eg |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | = or eg = = | clearly shown |  | A1 | dep on M1  continued to clearly show given result |
|  |  |  |  |  |  | **Total 2 marks** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **9** | (a) |  | 3 | 1 | B1 |  |
|  | (b) |  |  | 1 | B1 |  |
|  |  |  |  |  |  | **Total 2 marks** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **10** |  | 4 + 24 | 28 | 1 | B1 |  |
|  |  |  |  |  |  | **Total 1 mark** |

| 11 | (a) |  | 40 | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) | e.g. 9 × 4 or 68 – 32 oe |  | 2 | M1 | May be seen by side of pictogram. | |
|  |  |  | 36 |  | A1 |  | |
|  | (c) | |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  |  |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  |  |  | | --- | |  | | 2 rectangles of 6 sections and 1 small section | 1 | B1 | oe | |
|  |  |  |  |  |  | **Total 4 marks** | |

| 12 | (a) |  | 4*m* + 8 | 1 | B1 | do not isw further incorrect working |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) | 2*x* = −19 – 5 **or** 2*x* = −24 **or**  or |  | 2 | M1 |  |
|  |  |  | −12 |  | A1 | cao |
|  |  |  |  |  |  | **Total 3 marks** |

| 13 | (a) |  | 5*f* | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | 9*c* – 2*h* | 2 | B2 | (B1 for one correct term) |
|  | (c) |  | 5(2*d* + 3) | 1 | B1 |  |
|  |  |  |  |  |  | **Total 4 marks** |

| 14 | (a) |  | evens | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | Cross at 0 | 1 | B1 |  |
|  | (c) |  | Cross at the 2nd mark along | 1 | B1 | ie the mark before ½ |
|  | (d) |  | Cross at the 4th mark along | 1 | B1 | ie the mark after ½ |
|  |  |  |  |  |  | **Total 4 marks** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **15** |  |  |  | 1 | B1 for any fraction equal to |
|  |  |  |  |  |  |

| 16 | (a) |  | sphere | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | 12 | 1 | B1 | cao |
|  | (c) |  | 10 | 1 | B1 | cao |
|  |  |  |  |  |  | **Total 3 marks** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 17 |  | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | *x* | −1 | 0 | 1 | 2 | 3 | 4 | | *y* | −5 | −2 | 1 | 4 | 7 | 10 | | 3 | 3 |  | B3 for a correct line between −1 and 4  B2 for a correct straight line segment through at least 3 of (−1, −5)(0, −2)(1, 1)  (2, 4)(3, 7)(4, 10)  **OR** for all of (−1, −5)(0, −2)(1, 1)(2, 4)  (3, 7)(4, 10) plotted but not joined  B1 for at least 2 correct points plotted or stated (ignore incorrect points)  **OR** for a line drawn with a positive gradient through (0, −2) and clear intention to use a gradient of 3  **OR** a line drawn with a gradient of 3 |
|  |  |  |  |  |  | **Total 3 marks** |

| 18 | (a) |  | 47 | 1 | B1 | Answer in range 46.5 – 47.5 |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) | A correct method to convert either dirham to euros**or** euros to dirhame.g. 400 Dirham = 2 × 200 Dirham = 2 × “47” (= 94) euros**or** 90 euros = 30 + 60 = 127.5 +255 = 382.5 Dirham |  | 2 | M1 |  |
|  |  |  | France with correct calculations |  | A1 |  |
|  |  |  |  |  |  | **Total 3 marks** |

| 19 | (a) |  | Correct mirror line*x* = −1.5 | 1 | B1 | Correct line drawn at *x* = −1.5  allow freehand with intention to draw at −1.5 |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | Shape drawn | 2 | B2  (B1 | for correct shape with vertices at  (−1,2), (−1, 4), (−3, 2) and (−3, 5)  for a correct orientation or 90° clockwise turn about correct point) |
|  |  |  |  |  |  | **Total 3 marks** |

| 20 | (a) |  | 3.0 – 3.2 | 1 | B1 | for in the range 3.0 – 3.2 |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | Parallelogram | 1 | B1 | allow trapezium |
|  | (c) |  | 2 | 1 | B1 | cao |
|  | (d) |  | Correctly labelled | 1 | B1 | Angle *DAB* or angle *DCB* or both labelled |
|  |  |  |  |  |  | **Total 4 marks** |

| 21 |  | e.g. |  | 3 | M1 | for  expressed as an improper fraction |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | e.g.  **OR**  oe |  |  | M1 | correct cancelling or multiplication of numerators and denominators without cancelling |
|  |  | e.g. **or**   **or** | shown |  | A1 | dep on M2, for conclusion to  from correct working – either sight of the result of the multiplication e.g.  oe must be seen  **or** correct cancelling prior to the multiplication to  NB: use of decimals scores no marks |
|  |  |  |  |  |  | **Total 3 marks** |

| 22 |  | (−5)² − 4 × −5 oe e.g. 25 + 20 |  | 2 | M1 | for a correct substitution |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | 45 |  | A1 |  |

| 23 |  | e.g. 4 × 6 (= 24) |  | 4 | M1 | for finding the perimeter of square |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | e.g. (“24” – 6) ÷ 2 (= 9) |  |  | M1 | for finding the length of the longest side in the triangle |
|  |  | e.g. 18 × 3 + 6 or “9” × 6 + 6 |  |  | M1 | oe, allow their length of the longest side in the triangle as long as clearly stated or identified (could be on diagram) |
|  |  |  | 60 |  | A1 | dep on M2 |
|  |  |  |  |  |  | **Total 4 marks** |

| 24 |  |  |  | 3 | B3  (B2  (B1 | for all entries correct  for 3 sections of the Venn diagram correct)  for 2 sections of the Venn diagram correct) |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | **Total 3 marks** |

| 25 |  | *e* – *g* = 7*t* or oe |  | 2 | M1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | A1 | oe e.g. |
|  |  |  |  |  |  | **Total 2 marks** |

| 26 | (a) |  | 0 | 1 | B1 | condone |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | −2 | 1 | B1 | condone |
|  |  |  |  |  |  | **Total 2 marks** |

| 27 | (a) |  | **A** and **D** | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | Correctly enlarged shape | 2 | B2 | A correctly drawn shape (B1 for a shape with 3 sides correctly enlarged) |
|  |  |  |  |  |  | **Total 3 marks** |

| 28 |  | 5*x* – 3 = 4(2*x* + 3) oe **or**  oe |  | 3 | M1 | for correctly removing the denominator, condone missing brackets |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | e.g. 5*x* – 8*x* = 12 + 3 **or** −3*x* = 12 + 3**or** 8*x* – 5*x* = −12 − 3 **or** 3*x* = −12 – 3 **or**  **or** |  |  | M1 | for a correct rearrangement with terms in *x* on one side and numbers on the other,  allow correct rearrangement of their equation in the form *ax* + *b* = *cx* + *d* |
|  |  |  | −5 |  | A1 | dep on at least M1  SCB2 for an answer of  *x* = −2 coming from 5*x* – 3 = 8*x* + 3  **or** *x* = 5 coming from 5*x* – 3 = 2*x* + 12 |
|  |  |  |  |  |  | **Total 6 marks** |

| 29 | (a) |  |  | 2 | M1 | for (x ± 6)(x ± 7) |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | (x + 6)(x − 7) |  | A1 | for (x + 6)(x − 7) or (x − 7)(x + 6)  isw roots given if candidate solves the quadratic = 0 |
|  | (b) | 3x – 8x < 3 – 15 or 15 – 3 < 8x – 3x |  | 3 | M1 | accept as equation or with the wrong inequality sign. |
|  |  | – 5x < – 12 or 12 < 5x |  |  | M1 | accept as equation or with the wrong inequality sign. |
|  |  |  | x > 2.4 |  | A1 | Accept 2.4 < x or  oe  allow (−,2.4)  award M1 M1 A0 for 2.4 with = sign or no inequality or incorrect inequality sign. |
|  |  |  |  |  |  | **Total 5 marks** |

| 30 |  |  |  | 2 | M1 | Arcs on *BC*, *AB* and arcs from these points meeting **or** for bisector without arcs |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Correct bisector |  | A1 | must see correct arcs |
|  |  |  |  |  |  | **Total 2 marks** |

| 31 |  | or or  or  oe |  | 2 | M1 | for making *y* or 2*y* the subject |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | −2.5 |  | A1 | for −or −2.5 |
|  |  |  |  |  |  | **Total 2 marks** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | | | | | **Edexcel averages: scores of candidates who achieved grade:** | | | | | | |
| **New Qn** | **Skill tested** | **Mean score** | **Max score** | **Mean %** | **ALL** | | **5** | **4** | **3** | **2** | **1** |
| **1** | Fractions | 0.89 | 1 | 89 | 0.89 | | 0.98 | 1.00 | 0.86 | 0.57 | 0.33 |
| **2** | Fractions | 0.90 | 1 | 90 | 0.90 | | 0.98 | 1.00 | 0.79 | 0.57 | 0.67 |
| **3** | Algebraic manipulation | 0.91 | 1 | 91 | 0.91 | | 0.98 | 1.00 | 0.71 | 0.57 | 0.83 |
| **4** | Decimals | 0.91 | 1 | 91 | 0.91 | | 0.95 | 1.00 | 1.00 | 0.57 | 0.80 |
| **5** | Algebraic manipulation | 0.74 | 1 | 74 | 0.74 | | 0.92 | 0.75 | 0.57 | 0.29 | 0.00 |
| **6** | Percentages | 2.72 | 3 | 91 | 2.72 | | 3.00 | 3.00 | 2.57 | 1.71 | 1.50 |
| **7** | Graphical representation of data | 3.80 | 4 | 95 | 3.80 | | 3.89 | 4.00 | 3.69 | 3.57 | 3.20 |
| **8** | Fractions | 1.63 | 2 | 82 | 1.63 | | 1.97 | 2.00 | 1.00 | 0.86 | 0.00 |
| **9a** | Fractions | 0.73 | 1 | 73 | 0.73 | | 0.90 | 0.75 | 0.50 | 0.29 | 0.17 |
| **9b** | Fractions | 0.89 | 1 | 89 | 0.89 | | 0.95 | 0.88 | 0.86 | 0.86 | 0.50 |
| **10** | Integers | 0.91 | 1 | 91 | 0.91 | | 0.97 | 0.88 | 0.85 | 0.86 | 0.60 |
| **11** | Graphical representation of data | 3.63 | 4 | 91 | 3.63 | | 3.91 | 3.50 | 3.29 | 3.86 | 2.17 |
| **12** | Linear equations | 2.49 | 3 | 83 | 2.49 | | 2.92 | 2.37 | 2.23 | 0.86 | 1.00 |
| **13a** | Algebraic manipulation | 0.80 | 1 | 80 | 0.80 | | 0.87 | 0.75 | 0.71 | 0.71 | 0.67 |
| **13b** | Expressions and formulae | 1.72 | 2 | 86 | 1.72 | | 2.00 | 1.50 | 1.43 | 1.29 | 0.50 |
| **13c** | Expressions and formulae | 0.73 | 1 | 73 | 0.73 | | 0.95 | 0.50 | 0.57 | 0.00 | 0.17 |
| **14** | Probability | 2.84 | 4 | 71 | 2.84 | | 3.20 | 2.62 | 2.51 | 1.72 | 1.99 |
| **15** | Fractions | 0.68 | 1 | 68 | 0.68 | | 0.85 | 0.62 | 0.50 | 0.29 | 0.00 |
| **16** | Measures | 2.17 | 3 | 72 | 2.17 | | 2.58 | 1.76 | 1.77 | 1.15 | 0.80 |
| **17** | Graphs | 2.17 | 3 | 72 | 2.17 | | 2.72 | 1.75 | 1.43 | 1.14 | 0.50 |
| **18** | Graphs | 2.30 | 3 | 77 | 2.30 | | 2.80 | 1.63 | 1.93 | 1.42 | 0.33 |
| **19** | Transformation geometry | 1.93 | 3 | 64 | 1.93 | | 2.50 | 1.62 | 1.31 | 0.28 | 0.00 |
| **20** | Angles, lines and triangles | 2.71 | 4 | 68 | 2.71 | | 3.18 | 1.87 | 2.23 | 1.56 | 1.40 |
| **21** | Fractions | 1.75 | 3 | 58 | 1.75 | | 2.38 | 1.38 | 0.71 | 0.14 | 0.50 |
| **22** | Expressions and formulae | 1.22 | 2 | 61 | 1.22 | | 1.68 | 0.88 | 0.50 | 0.00 | 0.33 |
| **23** | Mensuration of 2D shapes | 2.50 | 4 | 63 | 2.50 | | 3.50 | 1.75 | 1.00 | 0.29 | 0.00 |
| **24** | Set language and notation | 2.17 | 3 | 72 | 2.17 | | 2.72 | 1.25 | 1.79 | 0.86 | 0.67 |
| **25** | Use of symbols | 1.11 | 2 | 56 | 1.11 | | 1.63 | 0.62 | 0.29 | 0.00 | 0.00 |
| **26** | Powers and roots | 1.25 | 2 | 63 | 1.25 | | 1.71 | 0.50 | 0.77 | 0.00 | 0.00 |
| **27** | Similarity | 1.50 | 3 | 116 | 1.50 | | 2.00 | 0.62 | 0.86 | 0.86 | 0.17 |
| **28** | Linear equations | 1.82 | 3 | 61 | 1.82 | | 2.72 | 0.62 | 0.50 | 0.00 | 0.00 |
| **29** | Inequalities | 2.71 | 5 | 54 | 2.71 | | 4.08 | 0.75 | 0.31 | 0.00 | 0.00 |
| **30** | Construction | 0.86 | 2 | 43 | 0.86 | | 1.37 | 0.12 | 0.00 | 0.00 | 0.00 |
| **31** | Algebraic manipulation | 0.73 | 2 | 37 | 0.73 | | 1.13 | 0.12 | 0.00 | 0.00 | 0.00 |
|  | **TOTAL** | **56.82** | **80** | **71** | **56.82** | | **69.89** | **45.36** | **40.04** | **27.15** | **19.80** |

**Suggested grade boundaries**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Grade** | **5** | **4** | **3** | **2** | **1** |
| Mark | 53 | 43 | 33 | 23 | 13 |