| 1 | (a) |  | 25 | 1 | B1 | cao |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | 1 and ½ squares | 1 | B1 | Oe the half symbol can be drawn in any direction. |
|  | (c) |  | Monday | 1 | B1 | M or Mon (allow incorrect spelling if meaning is clear) |
|  | (d) | 20 + 55 + 40 + ‘25’ + 30 |  | 2 | M1 | check by side of pictogram for working – allow values without ‘+’ signs if clear attempt to add (allow one error or omission) |
|  |  |  | 170 |  | A1 | cao |
|  |  |  |  |  |  | **Total 5 marks** |

| 2 |  |  | 7*x* | 1 | B1 | cao |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | 28*p* | 1 | B1 | cao |
|  |  |  |  |  |  | **Total 2 marks** |

| 3 | (a) |  |  | 2 | B1 B1 | B2 for 2 correct only. B1 for 1 correct only  – 1 mark for each incorrect tick if more than 2 ticks |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | Octagon | 1 | B1 | Accept misspellings |
|  | (c) |  | 6 ‘sectors’ shaded oe | 1 | B1 | Shading equivalent to 6 sectors |
|  | (d) | or |  | 2 | M1 |  |
|  |  |  | 42 |  | A1 |  |
|  |  |  |  |  |  | **Total 6 marks** |

| 4 | (a) |  | 548 | 1 | B1 | cao |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | 4.6 | 1 | B1 | allow 4.6000…. |
|  | (c) | (32 – 5) ÷ 2 |  | 2 | M1 |  |
|  |  | *Correct answer scores full marks (unless from obvious incorrect working)* | 13.5 |  | A1 | oe |
|  |  |  |  |  |  | **Total 4 marks** |

| 5 | (a) |  | 20 | 1 | B1 | cao |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | add 4 | 1 | B1 | oe 4 times table or 4*n* orgoes up in 4’s, allow ‘the gap is +4’ but not ‘the gap is 4’ |
|  | (c) |  | 4*n* | 1 | B1 | 4*n* + 0 not n = 4×n |
|  |  |  |  |  |  | **Total 3 marks** |

| 6 | (a) |  | 15 | 1 | B1 | cao |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) | 19 – 13 |  | 2 | M1 | 19 and 13 selected or  *a* – *b* where *a* = 19 or *b* = 13 |
|  |  | *Correct answer scores full marks (unless from obvious incorrect working)* | 6 |  | A1 | cao |
|  |  |  |  |  |  | **Total 3 marks** |

| **7** | (a) |  | 4 | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | 24*ab* | 1 | B1 | accept *ab*24 etc. but no × signs |
|  | (c) | 8*w* + *w*  or – 4*y* (+) – 3*y* |  | 2 | M1 | M1 for 9*w* or – 7*y* |
|  |  |  | 9*w –* 7*y* |  | A1 |  |
|  | (d) |  | 4(4 + 3*t*) oe | 2 | B2 | if not B2 then B1 for 2(8 + 6*t*) |
|  |  |  |  |  |  | **Total 6 marks** |

| 8 | (a) |  | 2.001, 2.07, 2.1,2.12, 2.19 | 1 | B1 | cao |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | 6 tenths | 1 | B1 | oe eg tenths, six tenths,  (do not allow 0.6 or .6) |
|  | (c) |  | 3.49 | 1 | B1 | cao |
|  | (d) |  | 60 | 1 | B1 | cao |
|  |  |  |  |  |  | **Total 4 marks** |

| 9 | (a) |  | Chicago | 1 | B1 | Accept misspellings |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | 16 | 1 | B1 | accept –16 |
|  | (c) |  |  | 2 | M1 | for clearly adding 3 lots of 2  or the sequence – 1, 1, 3, 5 |
|  |  |  | 5 |  | A1 |  |
|  |  |  |  |  |  | **Total 4 marks** |

| 10 | (a) |  | 9 | 1 | B1 | allow |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | 21 | 1 | B1 | allow |
|  | (c) | 8 + 2 – *p* = 6 oe eg 8 + 2 = 6 + *p* or  oe |  | 2 | M1 | (or embedded  eg 8 + 2 = 10, 10 ‒ 4 = 6) |
|  |  | *Correct answer scores full marks (unless from obvious incorrect working)* | 4 |  | A1 | allow |
|  |  |  |  |  |  | **Total 4 marks** |

| 11 | (a) |  | (1, 4) | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) | 180 + “68” or 360 – “112” |  | 2 | M1 | accept 66° to 70° or 110° to 114° seen or used. |
|  |  |  | 248 |  | A1 | accept 246° to 250° |
|  | (c) |  | 5.4 | 1 | B1 | accept 5.2 cm to 5.6 cm  ignore answer line if 1dp answer given on diagram or in space. |
|  | (d) |  | 27 | 1 | B1ft | ft “*their* c” × 5 if B1 awarded in part (c) |
|  | (e) |  | 2 hr 20 min | 2 | B1  B1 | for 2 hours  for 20 minutes  if no marks awarded,  SC B1 for eg 1hr 80min or 140min |
|  |  |  |  |  |  | **Total 7 marks** |

| 12 | (a) | *ξ*  6  18  4  8  16  12  2 10 14 |  | 3 | B3 | fully correct  (B2 for three correct regions)  (B1 for one or two correct regions)  [a repeat in a region is an error] |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  |  | 2 | M1 | Numerator correct (or value intended as numerator) or correct for their Venn diagram (so long as fraction not improper) or  6 out of 9 or 6 : 9 oe (ie correct values in incorrect form) |
|  |  |  |  |  | A1 | Oe allow (0.66)666….rounded or truncated  Allow 0.6 only if preceded by |
|  |  |  |  |  |  | **Total 5 marks** |

| **13** | (a) | eg  or or |  | 2 | M1 | Inverting and changing to multiply  or writing both fractions with the same denominator. |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | eg  or  or eg | shown |  | A1 | Conclusion to from correct working – either sight of the result of the multiplication eg must be seen or correct cancelling prior to multiplication.  NB use of decimals scores no marks. |
|  | (b) | eg  **or** eg |  | 2 | M1 | for correct fractions with a common denominator of 12 or a multiple of 12. |
|  |  | eg  oe | clearly shown |  | A1 | dep on M1 for a correct answer from fully correct working. |
|  |  |  |  |  |  | **Total 4 marks** |

| 14 | (a) |  |  | 1 | B1 cao | |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) | *x*2 – 3*x* + *x* – 3 |  | 2 | M1 for any 3 correct terms  **or**  for 4 out of 4 correct terms ignoring signs  **or**  for …  **or**  for … | |
|  |  | *Correct answer scores full marks (unless from obvious incorrect working)* | *x*2 – 2*x* – 3 |  | A1 | |
|  |  |  |  |  |  | **Total 3 marks** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 15 |  | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | ***x*** | −2 | −1 | 0 | 1 | 2 | 3 | | ***y*** | 7 | 4 | 1 | −2 | −5 | −8 |   (−2, 7) (−1, 4) (0 ,1)  (1, −2) (2, −5) (3, −8) | Correct line between  *x* = −2  and *x* = 3 | 3 | B3  (B2  (B1 | B3 for a correct line between  *x* = −2 and *x* = 3  for a correct straight line segment through at least 3 of (−2, 7) (−1, 4) (0, 1) (1, −2) (2, −5) (3, −8) **or** for all of (−2, 7) (−1, 4) (0, 1) (1, −2) (2, −5) (3, −8) plotted but not joined)  for at least 2 correct points stated (may be in a table) or plotted **or** for a line drawn with a negative gradient through (0,1) **or** for a line with a gradient of −3) |
|  |  |  |  |  |  | **Total 3 marks** |

| **16** | (a) |  | Enlargement  scale factor 3  centre (0, 0) | 3 | B1  B1  B1 | for enlargement, enlarge, etc so long as no mention of rotation, reflection or translation, flip, move etc.  SF 3, triple, three times etc. with no mention of a vector, line, angle of rotation.  Accept centre *O* or the origin |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) | line *x* = 5 drawn  **or** shape in correct orientation, not necessarily in correct position. |  | 2 | M1 | Can be implied by correct answer. |
|  |  |  | Shape with vertices at  (7, 2), (7, 4), (8, 3), (9, 3), (9, 2) |  | A1 |  |
|  |  |  |  |  |  | **Total 5 marks** |

| **17** |  | (0.5 × 4 × 6) – (0.5 × 2 × 3)  or 2 × 3 + 0.5 × 2 × 3  or (0.5 × 4 × 6) – (0.25 × “0.5 × 4 × 6”) oe |  | 3 | M2 | if not M2 then M1 for either  0.5 × 4 × 6 (= 12) or 0.5 × 2 × 3 (= 3)  if not M2 then M1 for either area of 1 large parallelogram (2 × 3) or 1 triangle (0.5 × 3 × 2)  Allow M1 for consistent use of incorrect side lengths, eg 0.5 × 5 × 7 |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | 9 |  | A1 |  |
|  |  |  |  |  |  | **Total 3 marks** |

| 18 | (a) |  | 1 | 1 | B1 |
| --- | --- | --- | --- | --- | --- |
|  | (b)(i) | (= 0) |  | 2 | M1 or (*x* + *a*)(*x* + *b*) where *ab* = −36 **or**  *a* + *b* = ‒5 |
|  |  | *Correct answer scores full marks (unless from obvious incorrect working)* |  |  | A1 (isw if they also solve the equation in this part) |
|  | (ii) | *Answers must ft from (b)(i)* | −4 and 9 | 1 | B1 ft Answer **must** ft from their  (*x* + *p*)(*x* + *q*) in (b)(i)  Award B0 for −4 and 9 if no marks scored in (i) |
|  |  |  |  |  | **Total 4 marks** |

| 19 | (i) | oe or  oe or  oe **and** oe  or (*x* =) −2 or (*x* =) 4 |  | 3 | M1 or one side of the inequality correct, i.e..oe or *x* < 4  Condone = rather than ≤ or < or any other sign for the M marks. | |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | or    or oe **and**  or (*x* =) −2 and (*x* =) 4 |  |  | M1 | |
|  |  | *Correct answer scores full marks (unless from obvious incorrect working)* |  |  | A1 allow and  Allow [−2, 4) | |
|  | (ii) |  |  | 2 | M1 ft for drawing a line from −2 to 4  or (indep) for a closed circle or [ at −2  or (indep) for an open circle or ) or [ at 4  Only allow a follow through for a double ended inequality | |
|  |  |  | Correct diagram |  | A1 ft for correct diagram  Only allow a follow through for a double ended inequality | |
|  |  |  |  |  |  | **Total 4 marks** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | **Edexcel averages: scores of candidates who achieved grade:** | | | | | | |
| **Qn** | **Mean score** | **Max score** | **Mean**  **%** | **ALL** | **5** | **4** | **3** | **2** | **1** | **U** |
| **1** | 4.55 | 5 | 91 | 4.55 | 4.80 | 4.75 | 4.65 | 4.49 | 3.19 | 2.07 |
| **2** | 1.74 | 2 | 87 | 1.74 | 1.91 | 1.79 | 1.71 | 1.50 | 1.37 | 1.08 |
| **3** | 5.06 | 6 | 84 | 5.06 | 5.79 | 5.30 | 5.03 | 4.23 | 2.92 | 1.37 |
| **4** | 2.82 | 4 | 71 | 2.82 | 3.77 | 3.16 | 2.37 | 1.73 | 0.96 | 0.31 |
| **5** | 2.25 | 3 | 75 | 2.25 | 2.54 | 2.23 | 2.10 | 2.02 | 1.88 | 1.39 |
| **6** | 1.99 | 3 | 66 | 1.99 | 2.54 | 2.21 | 1.89 | 1.29 | 0.45 | 0.46 |
| **7** | 3.96 | 6 | 66 | 3.96 | 5.19 | 4.41 | 3.28 | 2.39 | 2.00 | 0.74 |
| **8** | 2.30 | 4 | 58 | 2.30 | 2.96 | 2.54 | 1.94 | 1.54 | 1.15 | 0.62 |
| **9** | 2.54 | 4 | 64 | 2.54 | 3.13 | 2.53 | 2.44 | 1.92 | 1.52 | 0.38 |
| **10** | 2.31 | 4 | 58 | 2.31 | 3.32 | 2.42 | 1.89 | 1.18 | 0.87 | 0.38 |
| **11** | 3.94 | 7 | 56 | 3.94 | 5.32 | 4.12 | 3.30 | 2.57 | 1.92 | 1.00 |
| **12** | 2.66 | 5 | 53 | 2.66 | 3.79 | 2.78 | 2.21 | 1.50 | 0.58 | 0.69 |
| **13** | 1.93 | 4 | 48 | 1.93 | 3.34 | 2.15 | 1.05 | 0.49 | 0.08 | 0.00 |
| **14** | 1.44 | 3 | 48 | 1.44 | 2.42 | 1.52 | 0.89 | 0.43 | 0.19 | 0.00 |
| **15** | 1.29 | 3 | 43 | 1.29 | 2.14 | 1.26 | 1.01 | 0.36 | 0.00 | 0.00 |
| **16** | 1.95 | 5 | 39 | 1.95 | 2.96 | 1.95 | 1.60 | 0.87 | 0.33 | 0.00 |
| **17** | 0.94 | 3 | 31 | 0.94 | 2.12 | 0.59 | 0.30 | 0.12 | 0.11 | 0.00 |
| **18** | 1.06 | 4 | 27 | 1.06 | 2.31 | 0.76 | 0.32 | 0.14 | 0.12 | 0.00 |
| **19** | 0.86 | 5 | 17 | 0.86 | 2.01 | 0.53 | 0.15 | 0.01 | 0.12 | 0.00 |
|  | **45.59** | **80** | **57** | **45.59** | **62.36** | **47.00** | **38.13** | **28.78** | **19.76** | **10.49** |

**Suggested grade boundaries**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Grade** | **5** | **4** | **3** | **2** | **1** |
| Mark | 55 | 43 | 33 | 24 | 15 |