| 1 |  | 5.75 ÷ 5 (= 1.15) |  | 3 | M1 | for finding the cost of one chocolate bar |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | e.g. (7.85 – 2 × “1.15”) ÷ 3 |  |  | M1 | (dep on M1) for a complete method to find the cost of one packet of sweets |
|  |  |  | 1.85 |  | A1 | cao |
|  |  |  |  |  |  | **Total 3 marks** |

| 2 |  | (36 – 25) × 7.45 oe |  | 3 | M2  (M1 | for a complete method  for 36 – 25 (= 11) **or** for *W* × 7.45 where *W* is their weight) |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | 81.95 |  | A1 |  |
|  |  |  |  |  |  | **Total 3 marks** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | (a) | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **ramen** | **soba** | **udon** | **Total** | | **Boiled** | 18 | **5** | **8** | 31 | | **Fried** | **10** | 12 | 7 | **29** | | **Total** | **28** | **17** | 15 | 60 | | Correct table | 3 | B3  (B2  B1 | All 6 correct entries  4 or 5 correct entries  2 or 3 correct entries) |
|  | (b) |  |  | 1 | B1 | accept 0.11666... (accept 2 d.p. or better truncated or rounded)  or 11.666...% (accept 2 s.f. or better truncated or rounded) |
|  |  |  |  |  |  | **Total 4 marks** |

| 4 |  | e.g. 32.50 × 180 (= 5850)**or**e.g. 0.94 × 32.50 oe (= 30.55) |  | 3 | M1 | for finding the total income  **or** 94% of the cost of one ticket |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | e.g. 0.94 × “5850” oe**or**  “5850” – 0.06 × “5850” oe **or**180 × “30.55” |  |  | M1 | for a complete method |
|  |  |  | 5499 |  | A1 |  |
|  |  |  |  |  |  | **Total 3 marks** |

| 5 |  | 6 × 100 (= 600) **or** 17.5 ÷ 100 (= 0.175) |  | 3 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | “600” ÷ 17.5 (= 34.28…) **or** 6 ÷ “0.175” (= 34.28…) |  |  | M1 | ft incorrect conversion |
|  |  |  | 34 |  | A1 | cao |
|  |  |  |  |  |  | **Total 3 marks** |

| 6 |  | 3 kg = 3000 g or 150 g = 0.15 kg or 180 g = 0.18 kg or 1350 g = 1.35(0) kg |  | 3 | B1 | may be seen used as part of a calculation |
| --- | --- | --- | --- | --- | --- | --- |
|  | 3 × 150 + 5 × 180 (= 1350)  3 × 0.15 + 5 × 0.18 (=1.35(0)) |  | M1 | Could use their converted values |
|  |  | 1650 | A1 |  |
|  |  |  |  |  |  | **Total 3 marks** |

| 7 | (a) |  | Correct shape | 1 | B1 | cao |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) |  | 17, 21 | 1 | B1 | cao |
|  | (c) |  | 33 | 1 | B1 | cao |
|  | (d) |  | The numbers of shaded squares are odd numbers | 1 | B1 | Accept e.g. 50 is an even number  **or** the sequence is all odd numbers  **or** 49 is in the sequence so 50 can't be as it's only one more  **or** 53 is the next number after 49 **or** 49 and 53 are in the sequence (so not 50)  **or** nth term is 4*n* + 1 and for 50  *n* = 12.25 / not an integer |
|  |  |  |  |  |  | **Total 4 marks** |

| 8 | (b) | 15.5 × 8 (=124) or 15.5 × 8 × *x* 15.5 × 8 × *x* = 806 | 6.5 | 3 | M1 |
| --- | --- | --- | --- | --- | --- |
| 806 ÷ “124” | M1 dep |
|  | A1 |
|  |  |  |  |  | **Total 3 marks** |

| 9 |  | 0.5 × (13.5 + 17) × 10.4 | 158.6 | 2 | M1 for a complete method eg rectangle ±2 triangles |
| --- | --- | --- | --- | --- | --- |
|  |  | A1 allow 159 |
|  |  | **Total 2 marks** |

| 10 |  |  | 11 hours and 45 minutes | 2 | B2  (B1 | for 11 hours and 45 minutes  for 11 hours or 45 minutes) |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | **Total 2 marks** |

| 11 |  | | e.g.  oe **or** 0.24 × 100 | |  | | 2 | | | M1 | for a complete method |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | |  | | 24 | |  | | | A1 |  |
|  | |  | |  | |  | |  | **Total 2 marks** | | |

| 12 | (a) |  | 13 | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |
| (b) | 160 × 2 (=320)or “160 × 2” – 5 or“160 × 2 – 5” ÷ 3 | 105 | 2 | M1 | One correct inverse operation used |
|  |  | A1 |  |
| (c) |  |  | 2 | B2 | oe (B1 for oe or *P* = 3*n* + 5 ÷ 2 or for *P* = a formula including *n* with 2 operations correct eg *P* = 3*n* + 5 or for ) |
|  |  |  |  |  |  | **Total 5 marks** |

| 13 |  | 424 = 4*n* | 106 | 2 | M1 | For 424 or 324 + 225 –125 with at most one error |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | A1 | SCB1 for 524 or 674 |
|  |  |  |  |  |  | **Total 2 marks** |

| 14 | (a) | 520 – 465 (= 55) **or** (=1.118…) | 11.8 | 3 | M1 |  | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **or** 100 ×(“1.118” – 1) oe | M1 |  | |
|  |  | A1 | 11.8 or better (11.827956...) | |
| (b) | 0.12 × 550 (= 66) | 484 | 3 | M1 oe |  | M2 for  0.88 × 550 |
|  | 550 – “66” | M1 |  |
|  |  | A1 |  | |
|  |  |  |  |  |  | **Total 6 marks** | |

| 15 |  | e.g. 0.7 × 20 160 oe (= 14 112)  **or** 0.3 × 20 160 oe (= 6048) |  | 4 | M1 |  | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | e.g. “14 112” ÷ (9 + 5 + 2) (= 882)  **or** (20 160 − “6048”) ÷ (9 + 5 + 2) (= 882) |  |  | M1 |  | M2 for  × “14 112” oe |
|  |  | e.g. 9 × “882” – 2 × “882” |  |  | M1 |  |
|  |  |  | 6174 |  | A1 |  | |
|  |  |  |  |  |  | **Total 4 marks** | |

| 16 |  | 438 × 0.12 (= 52.56) **or** 44.39 ÷ 0.92 (= 48.25) |  | 4 | M1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 438 × 0.12 (= 52.56) **and** 44.39 ÷ 0.92 (= 48.25) **or** 438 × 0.12 (= 52.56) **and** “52.56” × 0.92 (=48.355) or  44.39 ÷ 0.92 (= 48.25) **and** “48.25” ÷ 0.12 (= 402.083…) |  | M1 |  |
|  | “52.56” – “48.25” **or** “48.355” – 44.39 = 3.965 **and** “3.965” ÷ 0.92 **or**  438 – “402.083…”(= 35.916..) **and** “35.916” × 0.12 |  | M1 | Dep on M2 |
|  |  | 4.31 | A1 |  |
|  |  |  |  |  |  | **Total 4 marks** |

| 17 |  | e.g. 1.5 × 2.4 – (−5.6) **or** 1.5 × 2.4 + 5.6**or** 3.6 + 5.6 oe |  | 2 | M1 | for a correct substitution |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | 9.2 |  | A1 | accept or |
|  |  |  |  |  |  | **Total 2 marks** |

| 18 | (a) |  | 70 < *s* ≤ 80 | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (b) | 10 × 45 + 16 × 55 + 19 × 65 + 23 × 75 + 12 × 85**or** 450 + 880 + 1235 + 1725 + 1020 (= 5310) |  | 4 | M2 | *f* × *d* for at least 4 products with correct mid-interval values and intention to add.  If not M2 then award M1  for *d* used consistently for at least 4 products within interval (including end points) and intention to add  **or**  for at least 4 correct products with correct mid-interval values with no intention to add |
|  |  | “5310” ÷ 80 |  |  | M1 | dep on at least M1 allow division by their provided addition or total under column seen |
|  |  |  | 66.4 |  | A1 | accept 66.37 – 66.4 |
|  |  |  |  |  |  | **Total 5 marks** |

| 19 |  | *ABD* = 180 – 143 (= 37) **or** *AEJ* = 76 **or** *CED* = 76 **or** *ECD* = 180 – 143 ( = 37) |  | 3 | M1 | may be marked on diagram |
| --- | --- | --- | --- | --- | --- | --- |
|  | 180 – 76 – “37” |  | M1 | A correct calculation for *EDC* |
|  |  | 67 | A1 |  |
|  |  |  |  |  |  | **Total 3 marks** |

| 20 |  | 360 – (59 + 115 + 68) (= 118) |  | 4 | M1 | angle values may be seen on diagram throughout |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | *x* = 62 |  | A1 | from correct working |
|  |  | Angles in a quadrilateral add up to 360. Accept “4-sided shape”  Angles on a straight line add to 180°  Base angles in an isosceles triangle (are equal) |  |  | B2  (B1 | (dep on M1) for all correct reasons for their method  (dep on M1) for 1 correct reason for their method) |
|  |  |  |  |  |  | **Total 4 marks** |

| **21** |  | 6 hrs 39 mins = 6.65 (hrs) or (mins) |  | 3 | B1 | |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Average speed =  oe eg |  |  | M1 | Use of *S* = *D* ÷ *T* (use of their time in hours)  [Allow  if B0 awarded] | |
|  |  |  | 64.5 |  | A1 | awrt 64.5 | |
|  |  |  |  |  |  | | **Total 3 marks** |

| 22 | (a) | for 0.035 × 40 000 oe (= 1400)  **or** 1.035 × 40 000 oe (= 41 400) | **OR** 40 000 × 1.0353 |  | 3 | M1 | for finding 3.5% **or** 103.5% of 40 000 | **OR** M2 for 40 000 × 1.0353  **or** 40 000 × 1.0354  (= 45 900.92)  (M1 for 40 000 × 1.0352 (= 42 849)) |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | 1.035 × “41 400” oe (= 42 849) 1.035 × “42 849” oe (= 44 348.72) |  |  | M1 | for completing method to find total amount in the account |
|  |  |  | | 44 349 |  | A1 | accept 44 348 – 44 349 | |
|  |  |  | |  |  |  | **SC:** if no other marks gained award M1 for  0.105 × 40 000 oe **or** 4200 **or** 44 200  accept (1 + 0.035) as equivalent to 1.035 throughout | |
|  | (b) | e.g. 30 481 ÷ (1 – 0.065) **or** 30 481 ÷ 0.935 | |  | 3 | M2  (M1) | for a complete method  for 30 481 ÷ (100 – 6.5) (= 326)  **or** (100 – 6.5)% = 30 481 **or** 93.5% = 30 481  **or** e.g. (1 – 0.065)*x* = 30 481 | |
|  |  |  | | 32 600 |  | A1 |  | |
|  |  |  | |  |  |  | **Total 6 marks** | |

| 23 |  | 4*x* + 6*x* + 11 + 9*x* – 18 = 126 oe eg  19*x* – 7 = 126 or  eg (126 + 18 – 11) ÷ 19 |  | 4 | M1 | A correct equation or a correct calculation for *x* |
| --- | --- | --- | --- | --- | --- | --- |
|  | *x* = 7 |  | A1 |  |
|  | 0.5 × (9 × “7” – 18) × (4 × “7”)  (0.5 × 45 × 28) |  | M1 | Dep on M1 |
|  |  | 630 | A1 | cao |
|  |  |  |  |  |  | **Total 4 marks** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | **Edexcel averages: scores of candidates who achieved grade:** | | | | | | |
| **Qn** | **Paper** | **Question** | **Mean score** | **Max score** | **Mean %** | **ALL** | **5** | **4** | **3** | **2** | **1** | **U** |
| **1** | 1F | Q10 | 2.54 | 3 | 85 | 2.54 | 2.89 | 2.78 | 2.41 | 2.00 | 1.03 | 0.64 |
| **2** | 1F | Q03 | 2.62 | 3 | 87 | 2.62 | 2.88 | 2.75 | 2.53 | 2.32 | 1.71 | 0.14 |
| **3** | 1F | Q08 | 3.39 | 4 | 85 | 3.39 | 3.80 | 3.64 | 3.25 | 2.81 | 1.81 | 0.28 |
| **4** | 1F | Q13b | 2.43 | 3 | 81 | 2.43 | 2.90 | 2.73 | 2.27 | 1.58 | 0.72 | 0.21 |
| **5** | 1F | Q06 | 2.26 | 3 | 75 | 2.26 | 2.79 | 2.46 | 2.09 | 1.33 | 0.76 | 0.07 |
| **6** | 2F | Q08 | 2.34 | 3 | 78 | 2.34 | 2.77 | 2.44 | 2.21 | 1.68 | 0.92 | 0.00 |
| **7** | 1F | Q05 | 3.15 | 4 | 79 | 3.15 | 3.50 | 3.22 | 3.01 | 2.80 | 2.10 | 0.64 |
| **8** | 2F | Q14b | 1.96 | 3 | 65 | 1.96 | 2.79 | 2.25 | 1.36 | 0.51 | 0.25 | 0.00 |
| **9** | 2F | Q14a | 1.25 | 2 | 63 | 1.25 | 1.75 | 1.42 | 0.89 | 0.35 | 0.22 | 0.00 |
| **10** | 1F | Q11 | 1.31 | 2 | 66 | 1.31 | 1.67 | 1.41 | 1.07 | 0.81 | 0.48 | 0.43 |
| **11** | 1F | Q13a | 1.23 | 2 | 62 | 1.23 | 1.72 | 1.34 | 0.97 | 0.41 | 0.22 | 0.14 |
| **12** | 2F | Q05 | 3.12 | 5 | 62 | 3.12 | 4.12 | 3.25 | 2.58 | 1.64 | 0.73 | 0.11 |
| **13** | 2F | Q07f | 1.14 | 2 | 57 | 1.14 | 1.53 | 1.26 | 0.89 | 0.43 | 0.35 | 0.22 |
| **14** | 2F | Q17 | 3.47 | 6 | 58 | 3.47 | 4.73 | 3.75 | 2.72 | 1.50 | 0.64 | 0.22 |
| **15** | 1F | Q17 | 2.14 | 4 | 54 | 2.14 | 3.29 | 2.40 | 1.22 | 0.50 | 0.17 | 0.07 |
| **16** | 2F | Q12 | 2.13 | 4 | 53 | 2.13 | 2.99 | 2.26 | 1.53 | 0.95 | 0.40 | 0.11 |
| **17** | 1F | Q12b | 1.09 | 2 | 55 | 1.09 | 1.59 | 1.11 | 0.87 | 0.40 | 0.02 | 0.00 |
| **18** | 1F | Q18 | 2.56 | 5 | 51 | 2.56 | 4.03 | 2.68 | 1.56 | 0.50 | 0.15 | 0.00 |
| **19** | 2F | Q11 | 1.48 | 3 | 49 | 1.48 | 2.34 | 1.55 | 0.76 | 0.29 | 0.24 | 0.00 |
| **20** | 1F | Q09 | 1.66 | 4 | 42 | 1.66 | 2.66 | 1.64 | 0.97 | 0.46 | 0.12 | 0.00 |
| **21** | 2F | Q15 | 1.33 | 3 | 44 | 1.33 | 2.10 | 1.20 | 0.88 | 0.42 | 0.17 | 0.00 |
| **22** | 1F | Q23 | 1.82 | 6 | 30 | 1.82 | 3.27 | 1.58 | 0.79 | 0.29 | 0.04 | 0.00 |
| **23** | 2F | Q10 | 1.14 | 4 | 29 | 1.14 | 2.45 | 0.72 | 0.08 | 0.04 | 0.00 | 0.00 |
|  |  |  | **47.56** | **80** |  | **47.56** | **64.56** | **49.84** | **36.91** | **24.02** | **13.25** | **3.28** |

**Suggested grade boundaries**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Grade** | **5** | **4** | **3** | **2** | **1** |
| Mark | 57 | 43 | 30 | 19 | 8 |