| 1 | (c) |  | 4 | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |

| 2 | (e) |  | 12*g* + 4 | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |

| 3 |  |  | 6.5 | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |

| 4 |  |  | 0.003, 0.035, 0.5, 0.539, 0.9 | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |

| 5 |  |  | 5(5*f* – 2) | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |

| 6 |  | 0.23 × 450 oe |  | 2 | M1 | or for an answer of 553.5 or 346.5 |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | 103.5 |  | A1 |  |
|  |  |  |  |  |  | **Total 2 marks** |

| 7 | a |  | 23 | 1 | B1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | b |  | Added 4 | 1 | B1 | accept +4, 4 more, oe, 4*n* − 1 (need to know 4 and we need to add/go up oe) |
|  | c | (23) 27, 31, 35, 39, 43, 47, 51, 55, 59, 63, 67, 71 **OR** 4*n* – 1 = 70 |  | 2 | M1 | allow list of numbers going up in 4’s up to 71 or more (allow one error) |
|  |  |  | 71 |  | A1 |  |
|  | d | No and identifying all terms in sequence are odd**OR**No and method to count on as far as 95 (or clearly showing 95)**OR**No and method to find *n* when term is 96e.g. solving 4*n* − 1 = 96 | No with reason | 1 | B1 | must have ‘No’ oe or ‘is not’ oe and a reason. |
|  |  |  |  |  |  | **Total 5 marks** |

| 8 |  |   | 13 50 | 3 | B3 | For the correct time of 13 50 or 1.50 pm or 1.50 in the afternoon oe(B2 for 1.50 or 1.50 am or stating 2 hours 40 mins or 160 mins orintention to add all 4 times onto 11.10B1 for intention to add all 4 times together or evidence of intention to add on 2 or 3 times to 11 10) |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | **Total 3 marks** |

| 9 | a | 150 ÷ 6 × 14 oe |  | 2 | M1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | 350 |  | A1 |  |
|  | b | 630 ÷ 90 × 6 oe |  | 2 | M1 |  |
|  |  |  | 42 |  | A1 |  |

| 10 |  | 20 – 2.35 (=17.65)  |  | 3 | M1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | ‘17.65’ ÷ 0.74 (= 23.8…) **or** 24 |  |  | M1 | A clear attempt to subtract 0.74 23 times |
|  |  |  | 23 |  | A1 |  |
|  |  |  |  |  |  | **Total 3 marks** |

| 11 |  |  (= 140) oe **or**  (= 112) oe |  | 3 | M1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | 280 – ‘140’ – ‘112’  |  |  | M1 |  |
|  |  |  | 28 |  | A1 |  |

| 12 |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Europe | Africa | Asia | Total |
| Male | 10 | **3** | **16** | **29** |
| Female | **14** | 6 | 11 | 31 |
|  | 24 | **9** | 27 | **60** |

 |  | B4 | for all 12 correct values. If not B4 then award(B3 for 9 or 10 or 11 correct values)(B2 for 6 or 7 or 8 correct values)(B1 for 4 or 5 correct values) |
|  |  |  |  |  |  | **Total 4 marks** |

| 13 |  | 162 ÷ (2 + 7) × 2 oe |  | 2 | M1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | 36 |  | A1 |  |
|  |  |  |  |  |  | **Total 6 marks** |

| 14 | a i |  | 33 | 1 | B1 | accept 32 – 34  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  ii |  | 15 | 1 | B1 | accept 15 – 16 |
|  | b | e.g. 820 ÷ 10 × “33” (= 2706) **or** 2850 ÷ 50 × “15” (= 855) |  | 2 | M1 | method to convert 820 metres to feet **or** 2850 feet to metres, allow ft from (ai) or (aii) **or** a value for 820 m to feet in range (2620 – 2740) **or** a value for 2850 feet to m in range (830 – 900) |
|  |  |  | 2850 feet supported by working |  | A1 | 2850 selected (could be unambiguously circled, underlined or stated) with correct working and figures as above to justify result, ft from part (ai) or (aii)  |
|  |  |  |  |  |  | **Total 4 marks** |

| 15 | a | 1.04 × 3 130 000 oe |  | 3 | M2 | complete method to increase salary by 4%M1 for 0.04 × 3 130 000 oe (= 125 200) |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | 3 255 200 |  | A1 |  |
|  | b | for 0.15 × 750 000 oe (=112 500)**or** 0.85 × 750 000 oe (637 500) | **OR** 750 000 × 0.853 |  | 3 | M1 | For method to find depreciation for 1 year or value after 1 year | **OR** M2 for 750 000 × 0.853(= 460 593.75) **or** 750 000 × 0.854 **(=** 391 504.69)(M1 for 750 000 × 0.852 **(=** 541 875) |
|  |  | 0.85 × “637 500” (= 541 875) oe0.85 × “541 875” (= 460 593.75) oe |  |  | M1 | for completing method |
|  |  |  | 460 594 |  | A1 | accept 460 593 – 460 594 |
|  |  |  |  |  |  | **SC:** if no other marks gained award M1 for 0.55 × 750 000 oe **(=** 412 500) **or** 0.45 × 750 000 oe **(=** 337 500)accept (1 – 0.15) as equivalent to 0.85 throughout |
|  |  |  |  |  |  | **Total 6 marks** |

| 16 |  | e.g. 360 – (30 + 45 + 165) (= 120) |  | 4 | M1 | method to calculate One Stop Shoes angle |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | e.g.  or oe |  |  | M1 | method to calculate ABC Shoes frequency |
|  |  | e.g. 165 ÷ 45 × 18 (= 66) oe **or** 165 ÷ 30 × “12” (= 66) oe**or** 165 ÷ “120” × 48 (= 66) oe **or** 18 + 48 having shown or implied that 120 + 45 = 165 and a clear intention that this is the method for Superfast Trainers (= 66) |  |  | M1 | method to calculate Superfast Trainers frequency |
|  |  |  | 12, 120, 66 |  | A1 | fully correct table |
|  |  |  |  |  |  | **Total 4 marks** |

| 17 | a |  | 50 < *L* ≤ 60 | 1 | B1 | oe eg 50 - 60 |
| --- | --- | --- | --- | --- | --- | --- |
|  | b | 25 × 6 + 35 × 26 + 45 × 31 + 55 × 40 + 65 × 17(150 + 910 + 1395 + 2200 + 1105)(= 5760) |  |  | M2 | For correct products using midpoints (allow one error) with intention to add. M1 for products using frequency and a consistent value within the range (allow one error) with intention to add or correct products using midpoints (allow one error) without addition |
|  |  |
|  |  | “5760” ÷ “120” |  |  | M1 | dep on M1 |
|  |  |  | 48 | 4 | A1 |  |
|  |  |  |  |  |  | **Total 5 marks** |

| 18 |  | eg (= 276) or 12 × 20 + (= 276)or 12 × 26 − (=276) |  | 5 | M2 | complete method to find the area of the shapeM1 for method to find the area of a rectangle 12 × 20 (= 240) or 12 × 26 (=312)or the area of the triangle (= 36)  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | “276” ÷ 20 (= 13.8) |  |  | M1 | (indep) method to find the number of tins for their area ft any value from a calculation that includes at least two of 20, 26 & 12  |
|  |  | eg 3 × $40 + 2 × $13 (= $146) or 14 × $13 (= $182)or 4 × $40 (= $160) |  |  | M1 | method to calculate a cost for their number of tins dep on previous M1 (NB: use n × $40 where n is the next multiple of 4 greater than the number of tins needed, divided by 4) |
|  |  |  | 146 |  | A1 | cao dep on accurate figures |
|  |  |  |  |  |  | Total 5 marks |

| 19 |  | 15 × 60 × 60 (= 54 000) oe **or** × 60 × 15 (= 4500) oe **or**5 × × 60 (= 1500) oe |  | 4 | M1 |  | M2 for (= 22 500) |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | ‘54000’ ÷ 12 × 5 (= 22 500) oe **or**‘4500’ × 5 (= 22 500) oe **or** ‘1500’ × 15 (=22 500) oe |  |  | M1 |  |
|  |  | ‘22 500’ × 0.002 oe |  |  | M1 | dep on M2 for a complete method |
|  |  |  | 45 |  | A1 |  |
|  |  |  |  |  |  | **Total 4 marks** |

| 20 |  |  oe eg  |  |  | M1 | or  oe |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | (*x* =) oe eg (*x* =)  |  |  | M1 | or oe |
|  |  |  | 35.9 | 3 | A1 | accept 35.7 - 36.1 |
|  |  |  |  |  |  | **Total 3 marks** |

| 21 |  | E.g. (72 ÷ 3) × 1.34 (= 17.91) **or**34.5 × 1.34 (= 46.23) **or**72 ÷ 1.34 (= 53.73) **or**(34.5 × 3) × 1.34 (= 138.69) |  | 4 | M1 | for converting £ to $ or $ to £ |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | 34.5 – ‘17.91’ (= 16.59) **or**‘46.23’ – (72 ÷ 3) = (22.23) **or**(34.5 × 3) – ‘53.73’ (= 49.77) **or**‘138.69’ – 72 (= 66.69) |  |  | M1 | for profit of 1 pair of jeans or 3 pairs of jeans |
|  |  |   **or****or**  **or**   |  |  | M1 | for a complete method |
|  |  |  | 93 |  | A1 | for 92.625 – 93  |
|  |  |  |  |  |  | **Total 4 marks** |

| 22 |  | 2 × (−6)2 + 3 × −2 **or** 72 – 6 **or** 2 × −6 × −6 + 3 × −2  |  | 2 | M1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | 66 |  | A1 |  |

| 23 |  | *ADC* = 180 – 58 (= 122) **or** *EDF* = 122**or** *CDE* = 58 **or** *ADF* = 58  |  | 5 | M1 | may be seen marked on the diagram |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | e.g. *DEF* = 58 ÷ 2 **or***DEF* = (180 – 122) ÷ 2 |  |  | M1 | complete method to find angle *DEF* |
|  |  |  | 29 |  | A1 |  |
|  |  |  |  |  | B2 | dep on M2 for fully correct reasons for their method (B1 dep on M1 for one correct reason stated and used) e.g. Allied angles, co-interior angles, Alternate angles, Corresponding angles, Vertically opposite angles are equal (or Vertically opposite angles are equal), Angles on a straight line add up to 180°(or angles on a straight line add to 180°), Sum of two angles in a triangle are equal to opposite exterior angle, Angles in a triangle add up to 180°(or Angles in a triangle add up to 180°), Base angles in an isosceles triangleAngles in a quadrilateral add up to 360. (accept “4-sided shape”or parallelogram)Opposite angles of a parallelogram are equal |
|  |  |  |  |  |  | **Total 5 marks** |

| 24 |  |  **or** *x* = 8  |  | 4 | M1 | (indep) |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | oe **or**‘66’ – 4 – 7 – 10 (= 45) |  |  | M1 | where *x* may be a number 7 < *x* < 10 |
|  |  | (*y* = ) (6 × 11 – 4 – 7 – 10 – ‘8’) ÷ 2  |  |  | M1 | ft their ft their value of *x* provided 7 < *x* < 10 for a fully correct method  |
|  |  |  | *x* = 8 and*y* = 18.5 oe |  | A1 |  |
|  |  |  |  |  |  | **Total 4 marks** |

| 25 |  | E.g. 1 − 0.2 (= 0.8) **or**  100(%) − 20(%) (= 80(%)) **or**(= 13.5) oe |  | 3 | M1 |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | E.g. 1080 ÷ 0.8 or1080 ÷ 80 × 100 or ‘13.5’ × 100 1080 × 100 ÷ 80 |  |  | M1 | for a complete method |
|  |  |  | 1350 |  | A1 |  |
|  |  |  |  |  |  | **Total 3 marks** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **Edexcel averages: scores of candidates who achieved grade:** |
| **Qn** | **Skill tested** | **Mean score** | **Max score** | **Mean %** | **ALL** | **5** | **4** | **3** | **2** | **1** |
| **1** | Linear equations  | 0.90 | 1 | 90 | 0.90 | 0.99 | 0.97 | 0.89 | 0.78 | 0.42 |
| **2** | Algebraic manipulation  | 0.73 | 1 | 73 | 0.73 | 0.95 | 0.82 | 0.67 | 0.31 | 0.24 |
| **3** | Measures  | 0.67 | 1 | 67 | 0.67 | 0.89 | 0.72 | 0.55 | 0.48 | 0.24 |
| **4** | Decimals  | 0.60 | 1 | 60 | 0.60 | 0.89 | 0.67 | 0.45 | 0.32 | 0.06 |
| **5** | Algebraic manipulation  | 0.47 | 1 | 47 | 0.47 | 0.81 | 0.50 | 0.30 | 0.12 | 0.00 |
| **6** | Percentages  | 1.59 | 2 | 80 | 1.59 | 1.93 | 1.81 | 1.44 | 0.97 | 0.88 |
| **7** | Sequences  | 3.91 | 5 | 78 | 3.91 | 4.42 | 4.27 | 3.85 | 3.25 | 1.88 |
| **8** | Measures  | 2.34 | 3 | 78 | 2.34 | 2.63 | 2.55 | 2.30 | 1.88 | 1.27 |
| **9** | Ratio and proportion  | 2.81 | 4 | 70 | 2.81 | 3.70 | 3.20 | 2.40 | 1.74 | 0.66 |
| **10** | Applying number  | 2.11 | 3 | 70 | 2.11 | 2.59 | 2.36 | 2.05 | 1.48 | 0.39 |
| **11** | Fractions  | 2.20 | 3 | 73 | 2.20 | 2.75 | 2.32 | 2.12 | 1.38 | 0.97 |
| **12** | Graphical representation of data  | 2.86 | 4 | 72 | 2.86 | 3.54 | 3.09 | 2.71 | 1.98 | 0.94 |
| **13** | Ratio and proportion  | 1.19 | 2 | 60 | 1.19 | 1.91 | 1.27 | 0.92 | 0.31 | 0.15 |
| **14** | Graphs  | 2.25 | 4 | 56 | 2.25 | 3.02 | 2.49 | 1.97 | 1.20 | 0.76 |
| **15** | Percentages  | 3.28 | 6 | 55 | 3.28 | 4.84 | 3.73 | 2.34 | 1.43 | 0.72 |
| **16** | Graphical representation of data  | 2.15 | 4 | 54 | 2.15 | 3.37 | 2.43 | 1.48 | 0.74 | 0.27 |
| **17** | Statistical measures  | 2.19 | 5 | 44 | 2.19 | 3.53 | 2.67 | 1.28 | 0.41 | 0.27 |
| **18** | Mensuration of 2D shapes  | 1.95 | 5 | 39 | 1.95 | 3.57 | 1.91 | 1.13 | 0.48 | 0.24 |
| **19** | Probability  | 1.32 | 4 | 33 | 1.32 | 2.37 | 1.50 | 0.70 | 0.19 | 0.00 |
| **20** | Trigonometry and Pythagoras'  | 0.85 | 3 | 28 | 0.85 | 1.70 | 0.88 | 0.27 | 0.14 | 0.09 |
| **21** | Applying number  | 1.11 | 4 | 28 | 1.11 | 2.08 | 1.08 | 0.51 | 0.42 | 0.15 |
| **22** | Expressions and formulae  | 0.57 | 2 | 28 | 0.57 | 1.01 | 0.51 | 0.30 | 0.38 | 0.27 |
| **23** | Angles, lines and triangles  | 1.37 | 5 | 27 | 1.37 | 2.76 | 1.25 | 0.61 | 0.28 | 0.18 |
| **24** | Statistical measures  | 1.00 | 4 | 25 | 1.00 | 2.11 | 0.94 | 0.36 | 0.09 | 0.06 |
| **25** | Percentages  | 0.66 | 3 | 22 | 0.66 | 1.47 | 0.58 | 0.14 | 0.11 | 0.03 |
|  |  | **41.08** | **80** | **51** | **41.08** | **59.83** | **44.52** | **31.74** | **20.87** | **11.14** |

**Suggested grade boundaries**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Grade** | **5** | **4** | **3** | **2** | **1** |
| Mark | 52 | 37 | 26 | 16 | 7 |