

**Practice Paper 2**

**May 2016**

**Higher Tier**

**Edexcel** Style

**Mark Scheme**

**Commissioned by The PiXL Club Ltd.**

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 0.13 | 2 | M1 for 1 – 0.34 – 0.53A1 |
| 2 | 2.03094(6823) | 2 | B2 for 2.03094 or betterB1 for 20.62 or 10.1529 seen |
| 3 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2 | 3 | 7 | 8 |  |  |
| 3 | 1 | 4 | 5 | 6 |  |
| 4 | 1 | 2 | 4 | 5 | 5 |
| 5 | 0 | 2 | 3 |  |  |

Key eg 2/3 represents 23 years | 3 | M1 for stemA1 ordered stem and leaf diagramA1 for key |
| 4 | -9 | 2 | M1 for 2x3+3x-5A1 cao |
| 5 | 3, 10, 29 | 2 | M1 for 13 +223+233+2A1 |
| 6a | Negative | 1 | B1 |
| 6b | 110-116 | 2 | M1 for line of best fitA1 |
| 7 | Straight line from (-2,-7) to (3,3) | 4 | **(Table of values)**C1 for axes scaled and labelled M1 for at least 2 correct attempts to find points by substituting values of *x*M1 ft for plotting at least 2 of their points (any points plotted from their table must be plotted correctly)A1 for correct line between *x* = −2 and *x* = 3**(No table of values)**C1 for axes scaled and labelled M1 for at least 2 correct points with no more than 2 incorrect pointsM1 for at least 2 correct points (and no incorrect points) plotted OR line segment of *y* = 2*x* – 3 drawnA1 for correct line between *x* = −2 and *x* = 3**(Use of *y* = m*x*+c)**C1 for axes scaled and labelled M1 for line drawn with gradient of 2 OR line drawn with a *y* intercept of –3 M1 for line drawn with gradient of 2 AND with a *y* intercept of –3 A1 for correct line between *x* = −2 and *x* = 3SC : B2 for the correct line from *x* = 0 to *x* = 3 |
| 8(i) | 35 | 1 | B1 |
| 8(ii) | Corresponding angles are equal | 1 | B1 |
| 9 | Large box with reasons | 3 | M2 for attempt to convert each box into a unitary comparison of some sort. (2.69/350 = 0.76… and 4.39/750 = 0.58..)A1 www |
| 10a | 4:3 | 2 | M1A1 |
| 10b | 40 | 2 | M1A1 |
| 11 |  | 3 | B3 for correct enlargement in correct positionB2 for enlargement in incorrect positionB1 for three lines enlarged by sc 2 or enlargement not from 0, different scale factor |
| 12 | 2.5 | 4 | B2 for trial between 2.5 and 2.6B1 for trial between 2 and 3 B1 for different trial between 2.5 and 2.55Values evaluated can be rounded or truncatedB1 for 2.5 |
| 13a | 450 m | 2 | M1 for mult. by 25000A1 cao |
| 13b | 20 cm | 2 | M1 for dividing by 25000A1 cao |
| 14a | 10 x + 7 | 2 | M1 for adding termsA1 |
| 14b | 3.5 | 2 | M1 for putting perimeter = 42A1 |
| 15 | 1464/8018.3 | 4 | M1 for fx consistently within interval incluing ends( allow one error)M1(dep) consistently using appropriate midpointsM1 ( dep on first M) for total fx/ total fA1 for answer within bounds |
| 16 | 973 1/3 | 2 | M1 8760/9 A1 allow 973.3 oe |
| 17 | y2 -3y - 54 | 2 | M1 for 3 of the 4 terms from expanding brackets correctA1 |
| 18 | 10.82 | 3 | M1 for squaring and addingM1 for square rootingA1  |
| 19a | 25,61,81,95,100 | 1 | B1 |
| 19b | Points plottedJoined | 2 | B1B1 can be joined with straight lines or curve |
| 19c | 36-38 | 1 | B1 |
| 19d | 27-30 | 2 | M1A1 |
| 20a | £2652.25 | 3 | M1 2500 x 1.03 ( 2575)M1 ‘25750 x 1.03A1 caoAccept alternative methods |
| 20b | 4 | 2 | M1 for an attempt to evaluate 3500 x 1.065*n* for at least one value of *n*- not equal to 1 or 4502.63/ 1.065nA1 cao |
| 21a | 38.9-38.95  | 3 | M1 for cos x = 7/9M1 for using inverse cosA1 |
| 21b | 9.2-9.4 ( 9.2829….) | 3 | M1 for tan 35 = 6/yM1 12.5 x tan 35A1 |
| 22a | 8 | 2 | M1A1 cao |
| 22b | 25 | 2 | M1A1 cao |
| 23 | 48 | 4 | M1 for ratio of area 32/200 oeM1 for ratio of volume (0.4 3) oe M1 for 750 x ‘0.43’)A1 cao |
| 24 | 20n with correct comment | 3 | M1 for correct expansion of either bracketA1 for 20 n from correct expansion of both bracketsA1 for 20 n is a multiple of 2NB Trial using different values for n score no marks. |
| 25a | 41.8 | 2 | M1 for 0.5 x 7.8 x 12.5 x sin59A1 for 41.7-41.8 |
| 25b | 10.8 | 3 | M1 use of cosine ruleM1 for correct order of evaluationA1 for 10.8  |
| 26 | 1.05 as the LB and UB agree to that no of sig fig | 5 | B1 for either 8.235 or 8.225B1 for 7.5135 or 7.5145M1 for correct division for UB OR LBA1 for 1.046913154.. and 1.046207692A1 for 1.05 and both UB and LB round to 1.05 oe |
| 27 | *x* = 8, *y* = -4*x* =4, *y* = 8 | 5 | M1 for substituting *y* =20 - 3*x*M1 for expanding (20-3*x*)2 eg 400 – 60*x* – 60*x* + 9*x* (3 out of 4 terms correct). A1 for 10*x*2 - 120*x* + 400 = 80 oeM1 for a correct attempt to solve the quadratic equation (10*x*2 - 120*x* + 320 or *x*2 - 12*x* + 32) eg by factorising or correct substitution into the quadratic formula. A1 for *x* = 8, *y* = -4 and *x* =4, *y* = 8 |
| 28a | Sketch | 2 | M1 for horizontal translation with at least three of the points ( (-1,0) (1, -2.5) ,(3,0) translated by the same amount.A1 for a curve through the points (0,6) (1,0) (3,-2.5) (5,0)(6,6) +/- ½ square |
| 28b | Sketch | 2 | M1 for a reflection in the y-axis throughA1 for a curve through the points(-4,6) ( -1, -2.5) (0,-2) ( 1,0) ( 2,6) +/- ½ square |