

Answers to Revision Paper C

1	<p>Order the scores 12 16 17 18 18 21 22 26 27</p> <p>The median is 18, the quartiles are 16.5 and 24. The interquartile range is $24 - 16.5 = 7.5$</p> <p>On average scores were higher in the second round. In the second round scores were less consistent (more varied). OR the scores were more consistent in the first round.</p>
2	$30000 \times (1 - 0.11)^4, 30000 \times (0.89)^4 = \pounds 18822.6723, \pounds 19000$
3	$(4x - 7)(x^2 - 3x + 2)$ $= 4x^3 - 12x^2 + 8x - 7x^2 + 21x - 14$ $= 4x^3 - 19x^2 + 29x - 14$
4	<p>SV is a tangent to the circle at T, TPQ and TQR are both right-angled triangles</p> $\angle STQ = \angle VTQ = \angle TPQ = \angle TRQ = 90^\circ$ $\angle QTR = 90^\circ - 68^\circ = 22^\circ, \quad \text{so } \angle TQR = 180^\circ - 90^\circ - 22^\circ = 68^\circ$ $\angle TQP = 180^\circ - 90^\circ - 37^\circ = 53^\circ$ $\text{angle } PQR = \angle TQR + \angle TQP = \mathbf{121^\circ}$
5	$s = \frac{1}{2}at^2 \rightarrow 2s = at^2 \rightarrow \frac{2s}{t^2} = a, \quad a = \frac{2s}{t^2}$
6	$20 - (5x + 6) \leq x + 11, \quad 20 - 5x - 6 \leq x + 11, \quad 3 \leq 6x, \quad x \geq \frac{1}{2}$
7	<p>Gradient is $\frac{75-30}{80-20} = \frac{45}{60}$</p> <p>The straight line is $y = \frac{3}{4}x + 15 \rightarrow H = \frac{3}{4}G + 15$ or $H = 0.75G + 15$</p>
8	$2a + 3c = 55.60 \quad 6a + 9c = 166.80 \quad c = 7.90, a = 15.95$ $3a + 5c = 87.35 \quad 6a + 10c = 174.70$ <p style="text-align: center;">An adult ticket is £15.95 and a child ticket is £7.90.</p>
9	$\frac{5}{x+2} - \frac{4}{x-3} = \frac{5(x-3)}{(x+2)(x-3)} + \frac{4(x+2)}{(x+2)(x-3)} = \frac{9x-7}{(x+2)(x-3)}$
10	$5x + 2y - 20 = 0, \quad 2y = -5x + 20 \quad y = -\frac{5}{2}x + 20. \quad \text{The gradient is } m = -\frac{5}{2}$
11	<p>Form a right-angled triangle</p> <div style="text-align: center;"> <p style="margin-left: 100px;">x</p> <p style="margin-left: 50px;">1.5 1.2</p> </div> <p>Using Pythagoras, $1.5^2 - 1.2^2 = 0.81, x = 9$ The width of chord ML is $2 \times 0.9 = \mathbf{1.8 m}$</p>