

**NOTES**

1.1.1	Answer Only : $x = -2$ or / of $x = 3$	Full Marks $\left(\frac{2}{2}\right)$
1.1.1	$x = 0$ or / of $x = 3$	No Marks $\left(\frac{0}{2}\right)$
1.1.3	No factors but correct critical values	Two marks up to this stage. Next two marks will be for accuracy of answer (combo).
1.1.4	<p><b>Alternative solution:</b></p> $\frac{3}{2}x^{-1} - \sqrt{6}x^{\frac{1}{2}} + 1 = 0$ $x^{\frac{1}{2}} = \frac{-(-\sqrt{6}) \pm \sqrt{(-\sqrt{6})^2 - 4\left(\frac{3}{2}\right)}(1)}{2\left(\frac{3}{2}\right)}$ $x^{\frac{1}{2}} = \frac{\sqrt{6}}{3}$ $\left(x^{\frac{1}{2}}\right)^{-2} = \left(\frac{\sqrt{6}}{3}\right)^{-2}$ $x = \left(\frac{3}{\sqrt{6}}\right)^2$ $x = \frac{9}{6} = \frac{3}{2}$	<p>✓ standard form</p> <p>✓ substitution</p> <p>✓ <math>x^{\frac{1}{2}} = \frac{\sqrt{6}}{3}</math></p> <p>✓ raising both sides to -2</p> <p>✓ answer (5)</p>
1.1.4	Squaring individual terms	Penalise & CA as long as it remains quadratic.
1.2	Normal C/A marking for simultaneous equations. Last mark is an independent mark	
2.2	Candidate cannot assume but first need to determine that it is a Geometric series.	
3.2	Accept candidates attempt – if scale factor is applied to 3 – 4 – 5 Pythagorean-triplet.	<p>✓ 3 – 4 – 5</p> <p>✓ scale factor 3</p> <p>✓ 9</p> <p>✓ 15</p>
3.3	Answer Only $\left(\frac{1}{4}\right)$	
3.3	Last/3 <sup>rd</sup> Option was misleading, although it yields the correct answer.	<b>Should be removed</b>
	<p><b>To be replaced with: ALTERNATIVE SOLUTION</b></p> $\text{Difference} = 8[(36 + 441) - (25 + 400)]$ $= 8(52)$ $= 416$	<p>✓ (36 + 441) &amp; (25 + 400)</p> <p>✓ 52</p> <p>✓ x 8</p> <p>✓ answer</p>

	<p><b>EXPLANATION: This is true because of:</b></p> $\sum_1 = \begin{matrix} T_1 & T_2 & T_3 & & & & & T_8 & T_9 & & & & & & & T_{14} & T_{15} & T_{16} \\ (36 + 49 + 64 + 81 + 100 + 121 + 144 + 169 + 196 + 225 + 256 + 289 + 324 + 361 + 400 + 441) \end{matrix}$ $\sum_2 = \begin{matrix} t_1 & t_2 & t_3 & & & & & t_8 & t_9 & & & & & & & t_{14} & t_{15} & t_{16} \\ (25 + 36 + 49 + 64 + 81 + 100 + 121 + 144 + 169 + 196 + 225 + 256 + 289 + 324 + 361 + 400) \end{matrix}$ <p><math>D = [(T_1+T_{16}) - (t_1 + t_{16})] + [(T_2+T_{15}) - (t_2+t_{15})] \dots \dots \dots [(T_8+T_9) - (t_8+t_9)]</math></p> <p><math>D = [(36+441) - (25+400)] + [(49+400) - (36+361)] + [(64+361) - (49+324)] \dots [(169+196) - (144+169)]</math>  <math>= 8(52)</math>  <math>= 416</math></p>	
4.5	Accuracy (Combo)	
5.1.1	Accept other Mathematically correct alternatives Eg. Using derivative = 0	
5.3	Candidate cannot assume that D and E are symmetrical. If learner assumes s/he loses first two marks. C/A the last two marks. Learner can get max $\left(\frac{2}{4}\right)$	
5.5	Accuracy marks	
6.2	Accept $y = a^x$ (Full marks)	
7.3.2	Question states to nearest rand – Penalise for incorrect rounding off.	
8.1	Penalise 1 mark for incorrect notation. Apply CA marking. Look out for candidates that manipulates steps, since they know what the answer should be. Answer Only $\left(\frac{0}{4}\right)$	
8.2.2	Deriving each of the individual terms $\left(\frac{0}{4}\right)$	
	If there are mistakes in getting to differentiable form, CA may be applied <b>only</b> if the first exponent is a fraction and the second is negative.	
9.5.1	Marks may be split	✓ $x < -1$ ✓ $x > 3$
9.5.3	Marks may be split	✓ $-1 < x < 3$ ✓ $x > 5$
11.2.2 (a)	<p><b>Correction to MG:</b></p> $\left(\frac{6}{10} \times \frac{4}{10} \times \frac{3}{9}\right) + \left(\frac{4}{10} \times \frac{6}{9} \times \frac{3}{9}\right) + \left(\frac{4}{10} \times \frac{3}{9} \times \frac{6}{8}\right)$ $= \frac{121}{450}$ $\approx 0,269$	<p>✓ adding of branches</p> <p>✓ answer</p>
11.3.1	Third mark : ✓ $P(B \text{ only}) = d$	

