Q1	Generally well done. Some students tried to use simultaneous equations to find a, b and c and the got stuck when they found b and ended up with two equivalent equations. Students had to answer the question – that is they had to state the equation – to get full marks.
Q2	Generally done well. Some boys did not make it obvious which x-value matched the gradient found. Substituting an x -value did not suffice unless stated before substituting; at x = -5 gradient = etc
Q3	a) Done well b) Boys had problems converting $\sqrt{3}$ to a power of 9. Also 9^{2x} was problematic, with many boys adding 2 to 2x not multiplying. c) Generally well done. Boys USE PENCIL to graph and check points
Q4	a) Done well b) Many boys did not factorise and so only got one value of t c) Generally done well. A mark was subtracted if no units were given.
Q5	a) Not done as well as it should have been. Many wrote 4 not 6. b) Generally done well c) Derivative done well. Some boys forgot to find y. Trivial arithmetic errors were made in this part. Poor notation in this question
Q6	a) Many boys answered in degrees and found only one angle. b) Disappointed to see many boys expanded the 2 inside the bracket and did not use sum/difference angle identities c) Done poorly. Many recognised that one curve was 120° but then wrote a = 1/3. The most common answer for b was 20°. this does not recognise the order of the transformation.
Q7	Not done very well. The derivative was done well. But then failed to find the quadratic factor of t. Some boys used the derivative. Many boys who found the quadratic factor stated that there were no factors of 3 that add to 1. Others wrote about what the graph would look like but did not show a mathematical proof that there were no other factors.

Q8	a) Generally done well Some boys use $T_0 = 52$ which was accepted. Many boys answered that $T_1 = 52$. This became problematic in part c. b) Well done c) For boys that got part a correct this part was generally done well. For the boys that stated $T_1 = 52$, many did not state any solutions.
Q9	(a) Well-answered, some students did not give exact value (b) (i) Some students used degree measure in the formula $A = \frac{1}{2}r^2\theta$ (ii) Students need to be more careful --- some included the two radii in the perimeter.
Q10	Two common mistakes: 1. Used 16.8 cm for PQ instead of QR 2. Didn't consider the second angle
Q11	(a) Some students had problems in getting the totals for Landline and No landline (b) Generally well-answered (c) A big problem in working. A typical working: $P(M) \times P(L) = P(M \text{ and } L) \quad if \ indep$ $\frac{207}{261} \times \frac{203}{261} = \frac{155}{261}$ $\quad 0.62 = 0.59$ $\quad 0.62 \neq 0.59$ Some students didn't use the answers from part (b)
Q12	(a) Well-answered (b) Many students forgot the bounds and didn't draw reasonably accurate graph (c) Some students put down $20 \leq C(x) \leq 4$ (d) Many students gave the opposite range: D is cheaper than B
Q13	(a) Well-answered (b) Read question carefully --- 4 d.p. (c) Well-answered
Q14	Most students wrote the two formulae down correctly. Some used the formula for the sum of two terms instead of Term 2. Many students made

	calculation errors when calculating the sum of 4 terms (and some didn't do that part). Many did not state why r = 1.4 does not work.
Q15	Most students did not use the factorised form but used the given information. 2 of the 3 equations in solution are enough to work out p, q successfully. The quality of graph drawing was below expectation. A single smooth graph is required. Clarity of thinking was lacking for part b). Match the facts given with the formula for f(x) to set up equations. The solution can be found using CAS. In part c) some could not find the exact answer. In part d) many misinterpreted what was being asked.
Q16	Generally well done. The graph needs to clearly show the asymptote and pass through (or nearly) the values calculated in part a). In part c) too many did not clearly state the value of v.
Q17	Many struggled with this question. A clear tree diagram helps here as does reading the question carefully. In part b) many missed the two different options. In parts c) and d) many students did not have any method to help answer the question.
Q18	Again a clear Venn diagram really helps and many struggled to complete this question just suing formulae. This question is not that hard but many students did not score well or left parts blank. All should know the difference between mutually exclusive and independent events.
Q19	Most students missed the similar triangles required in part a) and some who did use them had difficulty setting up the correct equation. Quite a few used the given formula to deduce that h = 24 – 3x but that received little credit (1 for substitution). The easiest connection is in the upper triangle where 24 – h = 3x. Part b) was generally done well.

Q20	(a) Many students had problems in rearranging equation. Some also had difficulties in solving a linear equation which involves some negative terms.
	(b) Well-answered if part (a) correct
Q21	(a) – (c) Well-answered in general
	(d) Some students worked out T_7 instead of S_7
	(e) Many students had problems in setting up the correct equation to solve for n