Preparation for A Level Mathematics at Lord Grey

Task 1	Algebraic Manipulation – Manipulating powers
	Watch the video https://www.youtube.com/watch?v=09CdqBlh7hY
	Try the review questions https://tinyurl.com/maths-transition-task1
	Write solutions to the following questions and email to s1105@lordgrey.org.uk 1) Given that $2^k = 8$ find the value of 2^{3k} 2) $64^p \times 16^q = 2^r$ write r in terms of p and q 3) Write $\frac{\sqrt{27}}{\sqrt[3]{81}}$ in the form 3^x

Task 2	Algebraic Manipulation – Rationalising surds
	Watch the video https://www.youtube.com/watch?v=88Mw69Zk7oA
	Try the review questions https://tinyurl.com/maths-transition-task2v2
	Write solutions to the following questions and email to s1105@lordgrey.org.uk 1) Rationalise the expression $\frac{7}{3-\sqrt{5}}$ 2) A triangle has an area of 6 cm^2 and a base of $3+\sqrt{6}$ cm. Find the length of the perpendicular height. 3) Work out $\frac{3\sqrt{2}}{1+\sqrt{3}} + \frac{4}{\sqrt{6}}$ expressing your answer in the form $a\sqrt{6} + b\sqrt{2}$ where a and b are improper fractions to be found.

Task 3	Straight line graphs – Gradients involving algebra
	Watch the video https://www.youtube.com/watch?v=aMKlKKGUaF0
	Try the review questions https://tinyurl.com/maths-transition-task3
	Write solutions to the following questions and email to s1105@lordgrey.org.uk 1) Find the gradient of the line segment joining $(3a, 5)$ and $(7a, 2)$ 2) Two co-ordinates $P(3p, 8)$ and $Q(6,2q)$ are connected by a line. Given the gradient of the segment $PQ = 4$, show that $q = 16 - 6p$. 3) Co-ordinate $T(3x + 5,\ 5)$ and $U(6, 3 - 2x)$ are joined by a line segment with a gradient $2x$. Given that $x < 0$, find the value of x as a fraction in its simplest form.

Task 4	Straight line graphs – Equations of straight lines
	Watch the video https://www.youtube.com/watch?v=9Wmtl3BsgIs
	Try the review questions https://tinyurl.com/maths-transition-task4
	Write solutions to the following questions and email to s1105@lordgrey.org.uk 1) Write the gradient and intercept of the line $4y - 8x + 12 = 0$ 2) Write the equation of the line segment joining $(5, 8)$ and $(-3, 10)$ in the form $ax + by + c = 0$ where a, b, c are integers. 3) Find the gradient and intercept of the line $5(3x - 2y) = 4(5y - 2)$.

Task 5	Wider reading
	You will also find a set of A Level Transition documents in the folder. These cover many of the GCSE topics and will ensure you are at the level you need to be able to access the A Level content straight away.