2.1 Polynomials & Quadratic Theory

	At the end of this outcome I should...	I can do	Revised
2.1.1	use Remainder Theorem to find remainder when dividing by $x - h$	❑	❑
2.1.2	determine the roots of a polynomial equation	❑	❑
2.1.3	use the Factor Theorem to determine the factors of a polynomial **$f(x) = (2x - 1)(3x + 2)(2x - 5)$**	❑	❑
2.1.4	know roots of $ax^2 + bx + c = 0$ are $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	❑	❑
2.1.5	know that discriminant of $ax^2 + bx + c = 0$ is $b^2 - 4ac$	❑	❑
2.1.6	use discriminant to determine nature of roots of a quadratic	❑	❑
2.1.7	use discriminant to find condition that the roots of a quadratic are real, equal or unequal **If $\frac{(x-2)^2}{x^2+2} = k, k \in R$, find values of k such that the equation has two equal roots**	❑	❑
2.1.8	know condition for tangency; intersection of line and parabola (lines and curves)	❑	❑
2.1.9	solve quadratic inequalities $ax^2 + bx + c \geq 0$ (or ≤ 0) **Find real values of x for $x^2 + x - 2 \geq 0$**	❑	❑
2.1.10	determine a quadratic equation given roots	❑	❑
2.1.11	prove that an equation has a root between two given values and improve on that root	❑	❑

N.B. **Bold** type indicates Level A/B content.