Applications of calculus- Work Requirements

Name:

Topic	**Knowledge**	**Skill**	**Ability**
18A Tangents and Normals (p.626) **Learning Goal:** *use differential calculus, to determine equations of normals and tangents to a graph* **Success Criteria:** *found equations of normals and tangents at specific points on a graph*		1, 2, 4, 7, 8a	3, 5, 6, 8b
18B Rates of change (p. 631) **Learning Goal:** *use differential calculus to determine instantaneous rates of change* **Success Criteria:** *calculated instantaneous and average rates of change*	2, 4	3, 5, 6	1
18C Stationary points (p. 632) **Learning Goal:** *locate stationary points on a graph* **Success Criteria:** *used differential calculus, to determine where stationary points are on a function*		1 (a,c,e), 2, 5, 6, 7 (a,c,e),	3, 4, 8, 9
18D Types of stationary points (p. 638) **Learning Goal:** *determine what kind of stationary points exist on a graph* **Success Criteria:** *identified minimums, maximums, and points of inflection on a graph, using differential calculus methods*	4, 6, 7, 11	1 (a,c), 2 (a,c,e), 5, 8	3 (a,c), 9, 12, 13
18E Optimisation (p. 645) **Learning Goal:** *find the conditions to maximise, or minimise, particular quantities* **Success Criteria:** *used differential calculus methods to find optimal conditions*	5	1, 2, 4, 7, 8, 9, 10, 13,	3, 6, 11, 12, 14, 15 (a,c), 16
18F Differentiation and Kinematics (p. 653) **Learning Goal:** *solve problems of kinematics* **Success Criteria:** *used differential calculus, to analyse velocities and accelerations of motion*	1, 3, 6,	2, 4, 5, 7, 9, 10, 12, 13	11, 14

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18G Antidifferentiation and Kinematics (p. 657) **Learning Goal:** *solve problems of kinematics* **Success Criteria:** *used the process of antidifferentiation, to analyse velocities, and positions of a moving object*	1	2, 3	4, 5
18H Family of functions + transformations (p. 659) **Learning Goal:** *analyse 'general' functions with variable parameters* **Success Criteria:** *used calculus to determine the features of 'general' functions*		1, 3 (a,d), 4, 2, 7	3 (b,c), 5, 6, 8
18I Newton's method for finding solutions (p. 664) **Learning Goal:** *use Newton's method to find a solution to an equation* **Success Criteria:** *generated a sequence of 'solutions', to approximate a solution, using the derivative of a function, through the use of CAS*	1 (a,c,e)	1 (b,d), 2	3