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| **Topic 5: Calculus**  | **Graphical behaviors of functions and the relationship between , , and**  |
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| 1. Given:
	1. Find
	2. Find the intervals of for which is increasing and decreasing
	3. Find
	4. Find the intervals of for which is concave up and concave down
 | (3 marks)(4 marks)(2 marks)(4 marks) |
| Mark scheme:1. Solving for Increasing: Decreasing:
2.
3. Concave up: Concave down:
 | (A1)(A1)(A1)(M1) ft Setting their first derivative = 0(A1) ft(A1) ft(A1) ft(A1) ft (M1) ft(M1) ft Setting their second derivative = 0(A1) ft(A1) ft(A1) ft |