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| **Topic 1: Number and Algebra**  | **Exponential Functions** |
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| 1. Students in a Biology class were studying the growth rate of E. coli. They observed the growth of the E. coli over a 10 hour period and collected data at the end of each hour. They modeled the function , where is the number of hours since the start of the observation.
	1. Find the population of E. coli
		1. At the start of the observation
		2. After 6 hours
	2. Calculate the time for the population to increase above 160.
	3. How many hours would it take to triple the amount of E. coli?
 | (3 marks)(2 marks)(2 marks) |
| Mark scheme:1. 1. 82
2. Solving by graphing or use of logs. hours
3. Solving by graphing or use of logs. hours
 | (A1)(M1)(A1)(M1)(A1)(M1)(A1) |