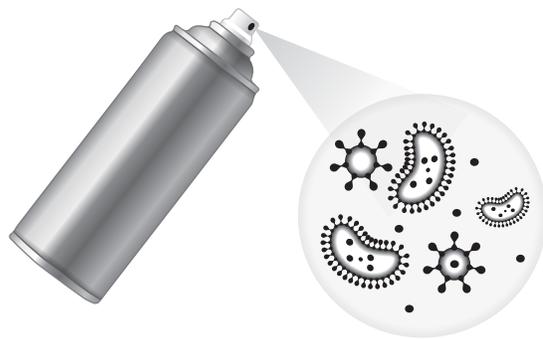


Evaluation Situation 2 – Bye-Bye, Bacteria!

A Montréal-based company wants to assess the effectiveness of two antibacterial sprays. In its lab, both products are sprayed on two similar-sized pieces of fabric containing the same number of bacteria. The company decides that the product that eliminates more bacteria as a function of the same spray time will be deemed more effective.



Air Breeze

To study the effectiveness of the *Air Breeze* antibacterial brand, the company's biologist models its behaviour with a mathematical function representing the number of bacteria remaining per square decimetre as a function of spraying time. The table of values below shows the data extracted from this functional model.

**NUMBER OF BACTERIA REMAINING PER SQUARE DECIMETRE
AS A FUNCTION OF SPRAYING TIME FOR *AIR BREEZE* BRAND**

SPRAYING TIME (s)	8	16	24	32	40
NUMBER OF BACTERIA REMAINING	480	240	160	120	96

No More Bacteria

The biologist repeats the same tests to study the behaviour of the *No More Bacteria* antibacterial brand. She runs out of time to model its behaviour with a mathematical function. She has only recorded the results of the experiment in the following table of values.

**NUMBER OF BACTERIA REMAINING PER SQUARE DECIMETRE
AS A FUNCTION OF SPRAYING TIME FOR *NO MORE BACTERIA* BRAND**

SPRAYING TIME (s)	5	10	15	20	25	30	35	45	55
NUMBER OF BACTERIA REMAINING	696	360	250	176	142	120	105	75	70

This company has recently hired you to assist the biologist. In the lab, you spray a piece of fabric measuring one square decimetre with the *No More Bacteria* antibacterial brand. You stop spraying when the number of bacteria remaining is at 200 per square decimetre. You must complete the analysis.

Task 1 ➔

You must calculate how many bacteria would remain on a piece of fabric of the same size if sprayed with the *Air Breeze* antibacterial brand for the same amount of time (s).

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SCORE FOR EACH CRITERION					
Cr. 1.1	5	4	3	2	1
Cr. 2.1	5	4	3	2	1
Cr. 2.2	10	8	6	4	2
/20 points					

Answer:
