Al Tomooh School C1C2C3
2022-2023

Mathematics Worksheet
Grade 11 General
اللهم لا سهل إلا ما جعلته سهلا

EMIRATES SCHOOLS ESTABLISHMENT
مؤسسة الإمارات للتعليم المدرسي

QUESTION:

A biologist is studying two types of bacteria. The table summarizes the model for the two types of bacteria with respect to their growth, where y represents the amount of bacteria and t represents the time in minutes.

Bacteria	Equation
A	$y = 200\, e^{kt}$
B	$y = 40\, e^{0.615\, t}$

For bacteria A, there are initially 200 bacteria and 850 bacteria after 40 minutes.
Use this information to determine the amount of time, to the nearest minute, for the amount of bacteria B to exceed the amount of bacteria A.

Drag and drop your answer to correctly complete the sentence.

The amount of bacteria B will exceed the amount of bacteria A in about ⬜ minutes.

| 5 | 3 | 6 | 10 |

SOLUTION:

Solve for k.

$$\Box = \Box\, e^{\Box}$$

Solve for t.

$$\Box\, e^{\Box} > \Box\, e^{\Box}$$

Why use $>$? _____