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**Report:**

Based on the plots we can see that as the value of  $\beta_{\max}$  increases the amount of infected is more than it was in the base value. On the other hand, we can see that as the value of  $\beta_{\max}$  decreases the amount of infected decreases. So the value of  $\beta_{\max}$  is proportional to the amount of infected.

In lab 8 we saw similar outcomes. In lab 8 as we increased the value of  $\beta$  the amount of infected would increase.

Therefore, in lab 8 & 9 both cases  $\beta$  is proportional to the amount of infected.