A bottle of milk is taken out of a refrigerator and placed in a pan of hot water to be warmed. The increasing

function M models the temperature of the milk at time t, where $M(t)$ is measured in degrees Celsius (°C)

and t is the number of minutes since the bottle was placed in the pan. M satisfies the differential equation

$\frac{dM}{dt} = \frac{1}{4}(40 - M)$. At time $t = 0$, the temperature of the milk is 5°C. It can be shown that $M(t) < 40$ for all

values of t.

Use the line tangent to the graph of M at $t = 0$ to approximate $M(2)$, the temperature of the milk at

time $t = 2$ minutes.

Secondly, is your approximation for $M(2)$ and over approximation or an under approximation?