$T = -15e^{kt} + 25$

at $t = 5$, $T = 20°C$

$20 = -15e^{k(5)} + 25$

$20 - 25 = -15e^{k(5)}$

$\frac{-5}{-15} = \frac{-15e^{k(5)}}{-15}$

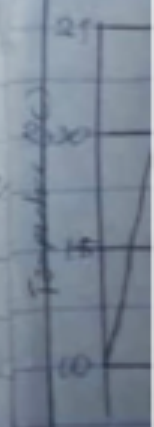
$\frac{1}{3} = e^{5k}$

$5k = \ln(0.3333)$

$\frac{5k}{5} = \frac{\ln(0.3333)}{5}$

$k = -0.22$

$T(t) = 25 - 15e^{-0.22t}$

(ii) Using Microsoft Excel

- Type in 't' for column 1
- Type in 'T' for column 2
- In column 1, type '0' under t
- On the home, click fill under editing
- Select series, choose columns, insert a step value of 1 and a step value of 60 then enter
- Then in column 2, under T, type = 25-15EXP(-0.22*A2) then enter
- Double click the dot at the bottom right of the cell
- Highlight Columns 1 and 2
- Go to insert and pick a graph type