



Mathcad - [Untitled:1] File Edit View Insert Format Tools Symbolics Window Help

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18/ENG05/026

$$y_0 := 10$$

at 5 min, temp =20 degrees  
actual temp=25  
taking average temp:(20+25)/2=22.5

using decay equation +  
 $y = y_0 \cdot \exp(k \cdot t)$   
if  $y = 22.5, y_0 = 10, t = 5$   
solving:  $k = 0.162$

rewriting equation to find k

$$t := \left( \frac{\ln\left(\frac{22.5}{10}\right)}{0.162} \right)$$

$$t = 5.006$$