

1 | **cooling pizza**

Compute

$$\int_0^5 -110e^{-0.4t} dt$$

to the nearest degree.

$$\int -110e^{-0.4t} dt = \frac{-110}{-0.4} e^{-0.4t} = 275e^{-0.4t}$$

Using the net change theorem,

$$\begin{aligned} \Delta\beta \int_0^5 -110e^{-0.4t} dt &= \int -110e^{-0.4(5)} dt - \int -110e^{-0.4(0)} dt \\ &= 275e^{-0.4(5)} - 275e^0 \\ &= 37.21720289 - 275 \\ &= 37.21720289 - 275 \\ &= 300 - 237.78279711 \approx \boxed{62} \text{ deg } F \end{aligned}$$