

Låt  $T(t)$  vara temperaturen över  $20^\circ\text{C}$  i kroppen  $t$  minuter efter  $15^{00}$

Texten ger då

$$T(0) = 9,5, T(110) = 7, T(t) = C \cdot a^t$$

Vi bestämmer  $C$  och  $a$ .

$$T(0) = 9,5 \Rightarrow C = 9,5 \text{ så } T(t) = 9,5 \cdot a^t$$

$$T(110) = 7 \Rightarrow 9,5 \cdot a^{110} = 7$$

$\Leftrightarrow$

$$a^{110} = \frac{7}{9,5}$$

$\Leftrightarrow$

$$a = \left(\frac{7}{9,5}\right)^{1/110}$$

$$\text{Alltså } T(t) = 9,5 \cdot \left(\frac{7}{9,5}\right)^{t/110}$$

$$\text{Lös nu: } T(t) = 19 \text{ dvs}$$

$$9,5 \cdot \left(\frac{7}{9,5}\right)^{t/110} = 17$$

$$9,5 \cdot \left(\frac{7}{9,5}\right)^{t/110} = 17$$

$$\Leftrightarrow \left(\frac{7}{9,5}\right)^{t/110} = \frac{17}{9,5}$$

$\Leftrightarrow$

$$\frac{t}{110} \cdot \lg \frac{7}{9,5} = \lg \frac{17}{9,5}$$

$\Leftrightarrow$

$$t = 110 \cdot \frac{\lg \frac{17}{9,5}}{\lg \frac{7}{9,5}}$$

så

$$t \approx -210$$

Alltså var kroppens temperatur  $37^{\circ}\text{C}$   
210 minuter innan 15.00, dvs 11.30.