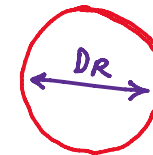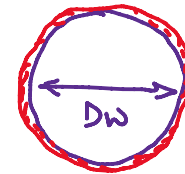$$\alpha = \frac{\beta}{2} = \frac{\gamma}{3}$$

$$\boxed{\alpha : \beta : \gamma = 1 : 2 : 3}$$

Example: A blacksmith fixes iron ring on the rim of the wooden wheel of a horse cart. The diameter of the rim and the iron ring are 5.243 m and 5.231 m, respectively at 27 °C. To what temperature should the ring be heated so as to fit the rim of the wheel? Given coefficient for linear expansion for iron is $1.20 \times 10^{-5} K^{-1}$

$D_W > D_R$

$D_0 = 5.231\,m$, at $T_0 = 27°C$

$D = 5.243\,m$ at $T = ?$, $\alpha = 1.2 \times 10^{-5}\,K^{-1}$

$$D = D_0 (1 + \alpha \cdot \Delta T)$$

$$5.243 = 5.231 (1 + 1.2 \times 10^{-5} \cdot \Delta T)$$

$$5.243 = 5.231 + 5.231 \times 1.2 \times 10^{-5} \cdot \Delta T$$

$$5.243 - 5.231 = 5.231 \times 1.2 \times 10^{-5} \cdot \Delta T$$

$$0.012 = \cdots \cdots$$

⑥