

Problema 401: Realiza os seguintes cambio de unidades:

- a) 25°C (a °F)
- b) 100°F (a °C)
- c) 0°F (a °C)
- d) 25°C ( a K)
- e) 350K (a °C)
- f) 50 cal (a J)
- g) 100J (a cal)

a) 25°C (a °F)

$$\frac{T(^{\circ}\text{C})}{100} = \frac{T(^{\circ}\text{F}) - 32}{180}$$

$$\frac{25}{100} = \frac{T(^{\circ}\text{F}) - 32}{180}$$

$$T(^{\circ}\text{F}) = \frac{25 \cdot 180}{100} + 32 = \underline{77^{\circ}\text{F}}$$

b) 100°F (a °C)

$$\frac{T(^{\circ}\text{C})}{100} = \frac{T(^{\circ}\text{F}) - 32}{180}$$

$$\frac{T(^{\circ}\text{C})}{100} = \frac{100 - 32}{180}$$

$$T(^{\circ}\text{C}) = \frac{100 - 32}{180} \cdot 100 = \underline{37,78^{\circ}\text{C}}$$

c) 0°F (a °C)

$$\frac{T(^{\circ}\text{C})}{100} = \frac{T(^{\circ}\text{F}) - 32}{180}$$

$$\frac{T(^{\circ}\text{C})}{100} = \frac{0 - 32}{180}$$

$$T(^{\circ}\text{C}) = \frac{0 - 32}{180} \cdot 100 = \underline{-17,78^{\circ}\text{C}}$$

d) 25°C ( a K)

$$T(\text{K}) = T(^{\circ}\text{C}) + 273 = 25 + 273 = \underline{298\text{K}}$$

e) 350K (a °C)

$$T(^{\circ}\text{C}) = T(\text{K}) - 273 = 350 - 273 = \underline{77^{\circ}\text{C}}$$

f) 50 cal (a J)

$$50 \text{ cal} = 50 \text{ cal} \cdot \frac{4,18 \text{ J}}{1 \text{ cal}} = \underline{209 \text{ J}}$$

g) 100J (a cal)

$$100 \text{ J} = 100 \text{ J} \cdot \frac{1 \text{ cal}}{4,18 \text{ J}} = \underline{23,92 \text{ cal}}$$