

(g) The temperature of the water is proportional to the time of heating.

(h) $T = (0.075)t + 8$

find t when $T = 20^\circ\text{C}$

$$20 = (0.075)t + 8$$

$$20 - 8 = (0.075)t$$

$$\frac{12}{0.075} = t$$

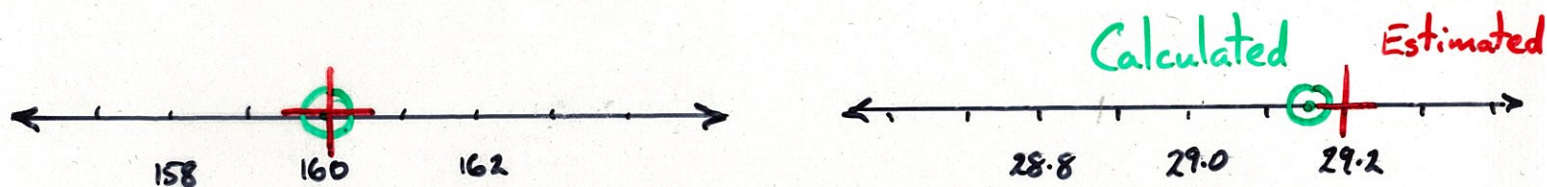
$$\underline{160 \text{ sec.} = t}$$

find T when $t = 282\text{s}$

$$T = (0.075)282 + 8$$

$$T = 21.15 + 8$$

$$T = \underline{29.15^\circ\text{C}}$$



(i) The physical significance of the y intercept is the ^{ideal} starting temperature of the water.

(j) The physical significance of the gradient is the rate at which temperature increases with time.