Question #9568 The sum of the length, width, and height of a rectangular box is 75 cm. The length is twice the sum of the width and height. The width exceeds the height by 5 cm. Find the dimensions.

Solution. Denote by l the length, w the width and h the height of a rectangular box. The condition implies $l = 2(w + h)$, $w = h + 5$, $l + w + h = 75$. Next $l = 4h + 10$, so $4h + 10 + h + 5 + h = 75$, this entails $6h = 60$ or $h = 10$ and $l = 50$, $w = 15$.

Answer The length is 50, the width equals 15 and the height equals 10.