Proposition 1. Let n, m, k be natural numbers such that $n \geq m$. Then $(n - m) \cdot k = (n \cdot k) - (m \cdot k)$.

Proof. We have

$$\begin{aligned} &((n - m) \cdot k) + (m \cdot k) \\ &= ((n - m) + m) \cdot k \\ &= n \cdot k \\ &= ((n \cdot k) - (m \cdot k)) + (m \cdot k). \end{aligned}$$

Hence $(n - m) \cdot k = (n \cdot k) - (m \cdot k)$. ■

Corollary 2. Let n, m, k be natural numbers such that $n \geq m$. Then $k \cdot (n - m) = (k \cdot n) - (k \cdot m)$.