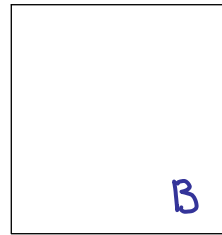
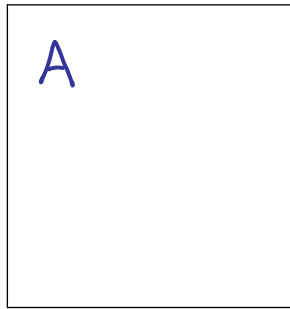


Laws of Arithmetic

Note Title

24/09/2008



Two sheets of paper overlap each other.

What is the difference in the areas of the non-overlapping parts ?

$$\begin{aligned} & (A-C) - (B-C) \\ = & \quad \{ \text{definition: } [x-y = x+(-y)] \} \\ & (A+(-C)) + (-(B+(-C))) \\ = & \quad \{ \text{distributivity} \} \\ & (A+(-C)) + ((-B) + (-(-C))) \\ = & \quad \{ \text{addition is associative and symmetric} \} \\ & A + (-B) + (-C) + (-(-C)) \\ = & \quad \{ \text{negation } [x+(-x) = 0] \text{ with } x := -C \} \\ & A + (-B) + 0 \\ = & \quad \{ \text{unit} \} \\ & A + (-B) \\ = & \quad \{ \text{definition} \} \\ & A-B . \end{aligned}$$