

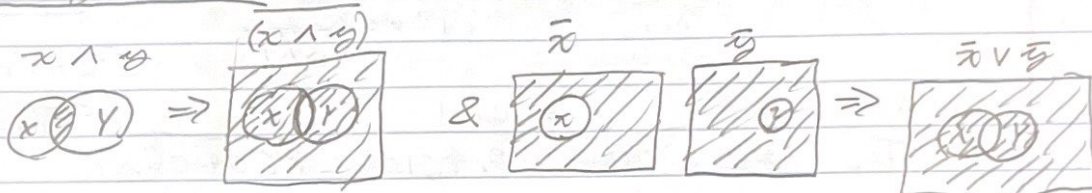
HW#24

Prove De Morgan law of Boolean algebra

$$\overline{(x \wedge y)} = \bar{x} \vee \bar{y} \quad \& \quad \overline{(x \vee y)} = \bar{x} \wedge \bar{y}$$

w/ \wedge means less than or, \vee means greater than, $\bar{}$ is opposite
 $0 \wedge 1 = 0$, $0 \vee 1 = 1$, $\bar{0} = 1$

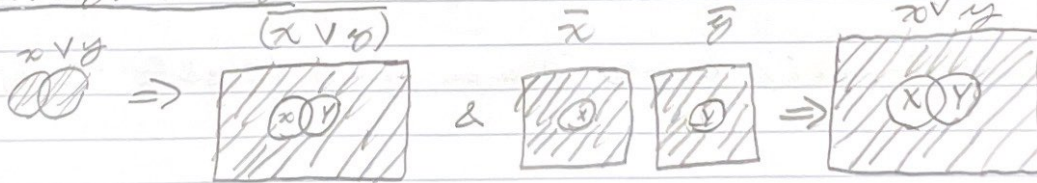
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$$\therefore \overline{(x \wedge y)} = \bar{x} \vee \bar{y}$$

The final part of the diagram shows two rectangles. The left rectangle is the complement of the intersection of x and y , labeled $\overline{(x \wedge y)}$. The right rectangle is the union of the complements of x and y , labeled $\bar{x} \vee \bar{y}$. Both rectangles are shaded with diagonal lines, and an equals sign is placed between them, confirming the identity.

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