Solution to Homework 21

Question. Which "and" and "or"-operations should we use in the following two situations:

- if we are controlling a group of objects, and malfunctioning of one of them is OK as long as, on average, they all fulfil their mission;
- if we are controlling a single object.

Answer.

- If we are controlling a group of objects, and we want to achieve the best overall result, we should use

$$f_{\&}(a,b) = a \cdot b \text{ and } f_{\vee}(a,b) = a + b - a \cdot b.$$

- If we are controlling an individual object, and we want to achieve the best result for this object, we should use

$$f_{\&}(a,b) = \min(a,b) \text{ and } f_{\vee}(a,b) = \max(a,b).$$