

Mathematische Grundlagen der Informatik SS2005

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Blatt 1

Die folgenden Aufgaben aus Dornhoff&Hohn: Applied Modern Algebra.

Aufgabe 1

The following is a portion of a report submitted by an investigator for a well-known market analysis agency with standards so high that it boasts that an employee's first mistake is his last:

Number of consumers interviewed:100

Number of consumers using brand X:78

Number of consumers using brand Y:71

Number of consumers using both brands:48

Why was the interviewer fired?

Aufgabe 2

Assume that in set of 16 defective integrated circuit chips. 10 possess defect d_1 , 6 possess defect d_2 , 8 possess defect d_3 , 3 possess defects d_1 and d_2 , 3 possess defects d_2 and d_3 , and 4 possess defects d_1 and d_3 . How many possess all three defects?

Aufgabe 3

Prove by mathematical induction the following generalized distributive law:

$$A \cap (\cup_{i=1, \dots, k} B_i) = \cup_{i=1, \dots, k} (A \cap B_i)$$