Norwegian University of Science
and Technology
Institutt for matematiske fag

MA0301 Elementary discrete mathematics Spring 2017

Exercise set 3

1 Homework Set 3

1 Grimaldi's book (5. ed., Exercises 15.1): solve **Exercise 1 c,d**

2 Grimaldi's book (5. ed., Exercises 15.1): solve **Exercise 2 c,d**

3 Grimaldi's book (5. ed., Exercises 15.1): solve **Exercise 11 b,c**

4 Grimaldi's book (5. ed., Exercises 15.1): solve **Exercise 10**

5 Grimaldi's book (5. ed., Exercises 3.2): solve **Exercise 16**

6 Let B be a Boolean algebra. For $x, y, z \in B$ find the dual expressions of

$$i)\ x \cdot y' + x \cdot z' + y \cdot x'$$

$$ii)\ x \cdot y \cdot z' + x \cdot y' \cdot z$$

$$iii)\ x \cdot y \cdot (x + 0 + (z \cdot 1))$$

7 Let B be a Boolean algebra. Prove for $x, y \in B$ that $x \cdot y' = 0$ if and only if $x \cdot y = x$.

8 Let B be a Boolean algebra. Let $x, y, z \in B$ and reduce the following expressions as much as possible.

$$i)\ xyz'yx \qquad ii)\ xyz'yx'z'$$