

**TMA4140**  
**DISKRET MATEMATIKK – DISCRETE MATHEMATICS**  
**NTNU, HØST/FALL2020**

EXERCISE SET 1 / ØVING 1

The solutions must be submitted via OVSYS (to the assigned group/TA).  
Løsningene må sendes inn via OVSYS (til den tildelte gruppen/TA).

Deadline for submission: **Monday, 31 August, 1:00pm**  
Innleveringsfrist: **Mandag 31. August, kl. 13:00**

Textbook: K. H. Rosen, *Discrete Mathematics and Its Applications*, 8. edition

**Exercise/Oppgave**

1. Section/Sektion 1.1: *14b,c,e, 16a,b,f, 34d,f*

**Exercise/Oppgave**

2. *Negate/Bestem negasjonen av:  $p \rightarrow (\neg q \leftrightarrow r)$*

**Exercise/Oppgave**

3. Section/Sektion 1.3: *12, 38c*

**Exercise/Oppgave**

4. *Use the laws of logic to simplify/Bruk logikkens lover til å forenkle:*

$$(p \vee (p \wedge q) \vee (p \wedge q \wedge \neg r)) \wedge ((p \wedge r \wedge t) \vee t)$$

**Exercise/Oppgave**

5. Section/Sektion 1.4: *24d,e.*

**Exercise/Oppgave**

6. Section/Sektion 1.5: *12b,e,j, 28d,h, 30b,c,e*