Oppgaver for kapittel 0

0.1.1

Calculate by writing the numbers as sums of ones, tens and hundreds, and applying the distributive law.

> **Example**
>
> $15 \cdot 3 = (10 + 5) \cdot 3 = 10 \cdot 3 + 5 \cdot 3 = 30 + 15 = 45$
>
> $147 \cdot 2 = (100 + 40 + 7) \cdot 2 = 100 \cdot 2 + 40 \cdot 2 + 7 \cdot 2 = 200 \cdot 80 + 14 = 294$

a) $17 \cdot 2$ b) $59 \cdot 3$ c) $25 \cdot 4$ d) $582 \cdot 2$ e) $981 \cdot 3$

0.2.1

Write the numbers as a multiplication between two factors.

a) 100 b) 30 c) 40 d) 70

e) 42 f) 32 g) 84 h) 90

0.2.2

Prime factorize the numbers from Exercise 0.2.1.

Note: It is recommended that the reader find it's own ways of prime factorization, but those who insist on following a schematic method can look up Exercise 0.2.5.

0.2.3

Factorize the numbers from Exercise 0.2.1 in three different ways.

0.2.4

6 is called a **perfect number** because the sum of it's factors 6 (including 1, but excluding 6) equals 6: $1 + 2 + 3 = 6$. Find the next perfect number (it lies between 15 og 30).

0.2.5

The examples below shows a method for prime factorization of numbers. Explain the method.

Example 1

$84 = 2 \cdot 2 \cdot 3 \cdot 7$

	:	
84	2	42
42	2	21
21	3	7

Example 2

$595 = 5 \cdot 7 \cdot 17$

	:	
595	5	119
119	7	17

Gruble 1

Explain why the product of to odd numbers always equals an odd number.

Gruble 2

Explain a method for checking if a number is a prime number.