**Svar på oppgaver:**

**Problem 1:**

Given the definition for water/oil:

And the volume deffinition:

We can assume:

Turning the volume to mass and inserting everything

**Problem 2:**

1. We have EoS for liquid mixture expressed as , and isothermal compressibility expressed as

With temperature neglected

we get

Rearranged isothermal compressibility

Plug in rearranged isothermal compressibility for in EoS for liquid mixture

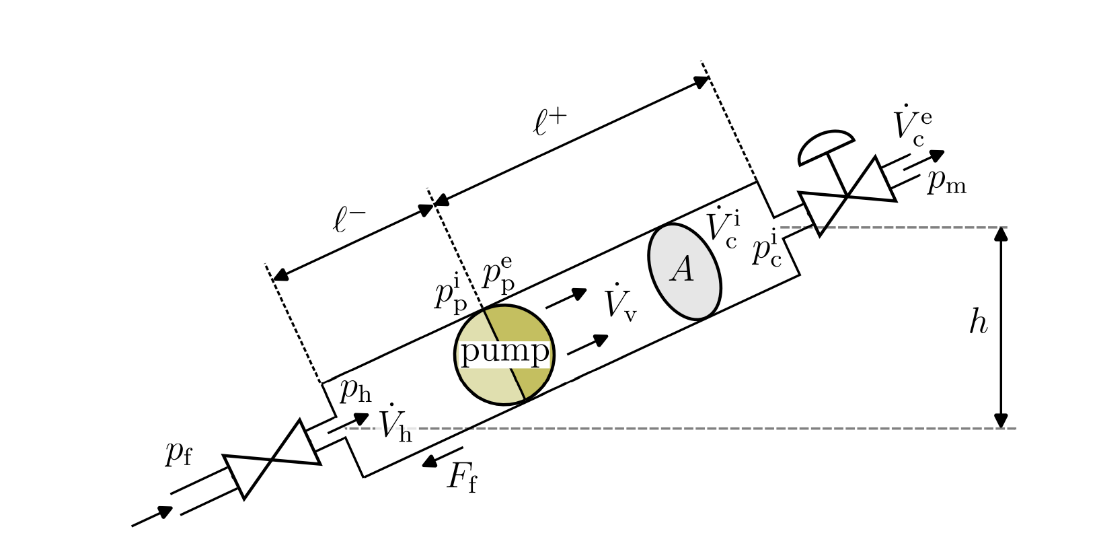
**Problem 3:**

We assume then constant, therefore:

Since :

Since the density is constant there is also possible to say that the pressure is constant.

**Problem 4:**



1. If we say that: and then:

**Problem 5**

1. The total force F can be expressed as:
2. The pressure changes and are pending on the following models:

Where is an function of

**Problem 6:**

**1:**

Given:

Where defined:

Inserting and moving constants out

And assuming m\_i = m\_e

**2:**

given:

Where:

And:

Giving the final transformation: