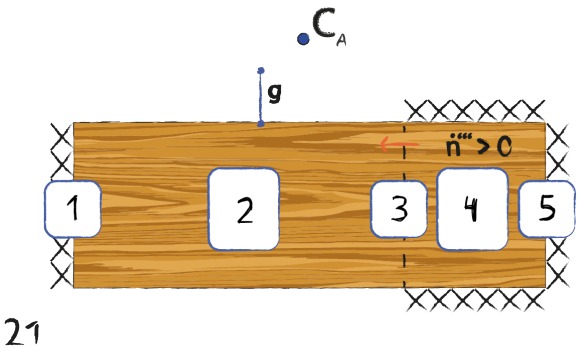
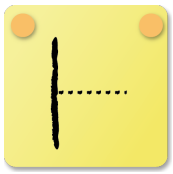
Concentration Profile: Task 21



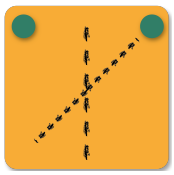
The image describes a body consisting of two sections. The right section is specified by a mass source and impermeable boundaries. The left section's boundaries are convective with the exception of the left one beeing impermeable as well.

1 

The impermeable boundary condition yields a zero gradient.

2 

As mass is produced inside the body, convective transfer points outwards. Therefore mass flux inside the body increases towards the right, yielding a steeper slope in concentration profile.

3 

The transition is characterized by a smooth concentration profile, due to equal concentrations and diffusion coefficients.

4 

There is a mass source within this section, causing a higher mass flux towards the left and therefore a steeper gradient.

5 

Due to an impermeable boundary, mass flux and such the concentration gradient vanish at the right.