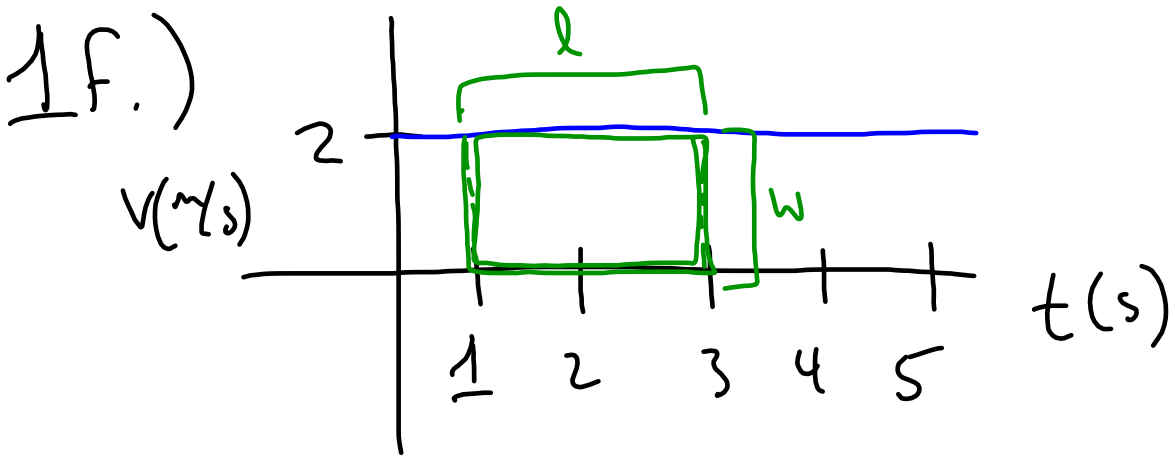
Worksheet 4

$$\left(\frac{m}{s}\right)\left(\frac{s}{1}\right) = \frac{m \cdot \cancel{s}}{\cancel{s}} = m$$

1f.)



$$A = lw$$

$$= (2s)(2\,m/s)$$

$$= 4\,m$$

This represents the object's displacement from 1s to 3s, because we used a velocity-time graph.

Model Name:

Constant Velocity Particle Model

Description:

Particle moving with a constant velocity

Properties:

- Measured
  - Position (m)
  - Time (s)
- Calculated
  - Distance (m) → Δx
  - Displacement (m) → $\Delta \vec{x}$

"→" means vector ($\Delta \vec{x}$)

- Velocity = $\frac{\Delta \vec{x}}{\Delta t}$ (vector!)

↑ change in

- Speed = $\frac{\Delta x}{\Delta t}$ (scalar!)

Representations:

- Graphical
  - Velocity-time graph
  - Position-time graph
  - Speed-time graph
- Motion Maps
- Mathematically
  - $\overline{v} = \frac{\Delta \bar{x}}{\Delta t}$
  - $= s = \frac{\Delta x}{\Delta t}$
  - $= y = mx + b \rightarrow$ lines on graphs
- Written descriptions

Rules of Behavior:

- Change in position is directly proportional to change in time