

Moving train problem

1. A train is moving at a steady 30 m/s. At $t=0$ s, the engine passes a signal light at $x=0$ m. **Without using any formulas**, find the engine's position at $t=1$ s. Also at $t=2$ s and $t=3$ s.

2. Graph position and velocity of the train (x vs t and v vs t)

3. Is there any relation between train's displacement and velocity curve? If yes, then what is it?

4. Given the velocity graph below find position of a moving object at $t=1, 2, 3, 4$ s. Assume that $x(0)=0$.

You are not allowed to use kinematics equations!

