

## Mechanics 1

1. The body was moving from steady state with constant acceleration and it hits the velocity  $v = 80 \text{ m}\cdot\text{s}^{-1}$  in 10 s. What was the distance it made?
2. Calculate the angular velocity (in  $[\text{rad}\cdot\text{s}^{-1}]$ ) of the Earth rotation. Calculate also the tangential velocity at the equator (when the radius of the Earth is 6370 km).
3. The body was moving straight forward with constant acceleration. It made 18m long path in the first 3 s and next 22 m in following 2 s. What was initial speed and acceleration?

HW: A swimmer, who has the speed (regarding to the water)  $0.85 \text{ m}\cdot\text{s}^{-1}$  is swimming in a river. The speed of the water in this river is  $0.40 \text{ m}\cdot\text{s}^{-1}$ . Determine the time, in which the swimmer is passing from point A to point B, which are in a distance 90 m, when he is swimming against the flow.