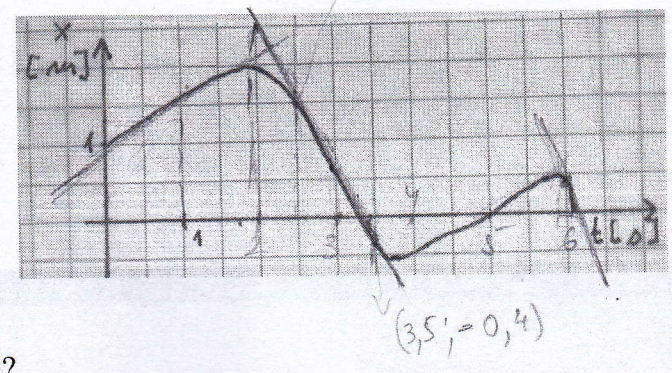
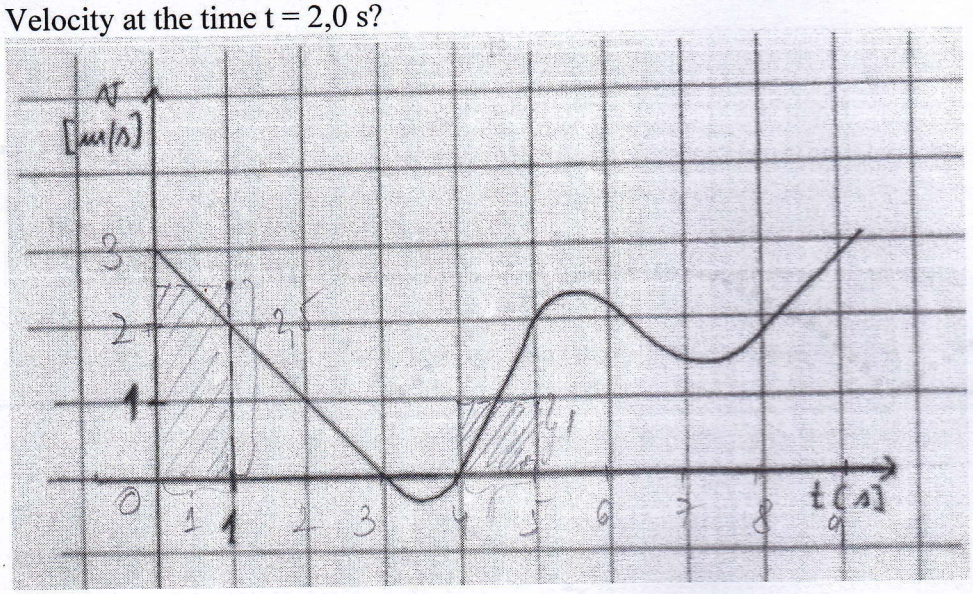
Homework

2. Here is x(t) graph. Calculate:
a) Path.
b) Velocity at t = 3,0 s.
c) Time interval when the velocity was negative.
d) Acceleration (from t = 0 to 1 s).



3. Here is v(t) graph of a linear moving body.
a) How many changes is there in the sign of velocity?
b) Calculate the displacement in the first second?
c) During which second the displacement was 1,0 m (first, second, third , ...)
d) Velocity at the time t = 2,0 s?



2. a) 5,0 m

b) $v = \frac{\Delta x}{\Delta t} = \frac{x_2 - x_1}{t_2 - t_1} = \frac{-0,6 - 1,5}{3,5 - 2,5} = -1,9$ m/s

c) 1,8 s → 3,5 s ; 5,6 s → 6,2 s

d) $a = 0$ m/s² because v is constant

3. a)

0–3	3–4	4–9
+	−	+

⇒ 2 changes in the sign of velocity

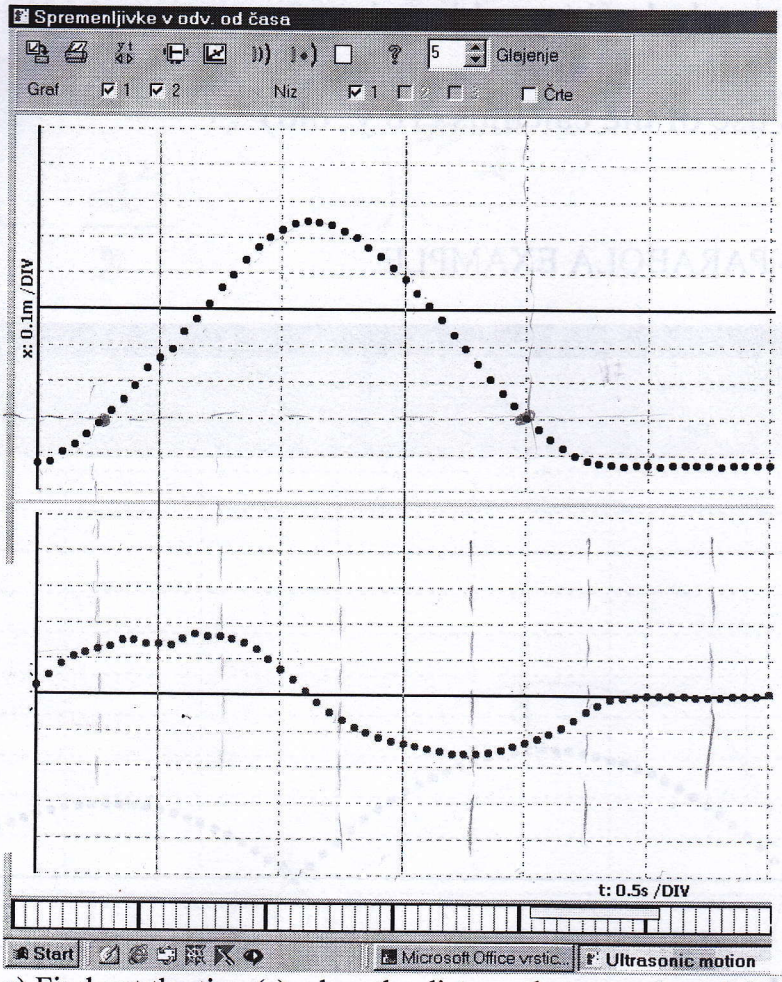
b) displacement = 1 s × 2,5 m/s = 2,5 m = Δx

c) the 5th second, the displacement = 1 s × 1 m/s = 1 m

d) t = 2 s ⇒ v = 1 m/s

Homework

4. There are two graphs of a moving body: x(t) and v(t).



a) Find out the time(s) when the distance between the origin and the body was 0,20 m.

0,25 s ; 2 s

b) How many measurements did the measuring system carry out per second?

20 measurements/s

c) What is the path length during first two seconds?

12,2 × 0,1 = 1,22 m

d) Find out the scale of v(t) graph. Examining x(t) graph will be helpful to fulfill this task.

v: 0,5 [m/s]