Summary of Homework #1

(Instructor: Dr. Levy; "Dynamics"; problems: 12-13/15//16/24/25; Jan. 20 2005)

Problem 12.13

Most of the students did it correctly, some of them did not show at time t=1s and t= 5 s the velocity of the particle are zero, which is important in calculating the total distance.

Problem 12.15

95% students did a good job.

Problem 12.16

Some students forgot the chain rule for taking derivatives:

$$v = \frac{5}{4+s} = \frac{ds}{dt}$$

So

$$a = \frac{dv}{dt} = \frac{d\upsilon}{ds} * \frac{ds}{dt} = [\frac{d}{ds}(\frac{5}{4+s})] * \frac{ds}{dt} = \frac{-5}{(4+s)^2} * \frac{ds}{dt} = \frac{-5}{(4+s)^2} * \frac{5}{4+s} = \frac{-25}{(4+s)^3}$$

Problem 12.24

Most students had no problem.

Only two or three misunderstood that the condition for B bullet to pass A bullet is $\upsilon_A = \upsilon_B$.

The correct condition is $S_A = S_B$

Problem 12.25

Two or three students got full points.

One student applied the trapezoid method instead of Simpson's $\frac{1}{3}$ rule.

Some students tried to use Simpson's $\frac{1}{3}$ rule, but the number of subintervals are odd number (should be an even number).

Many students totally had no idea.