Physics 100

Assignment #2. Answer key

A). In interval D: $t_1 = 10\ (s)$, $x_1 = -20\ (m)$;

$t_2 = 12\ (s)$, $x_2 = -20\ (m)$;

displacement: $\boxed{\Delta x = x_2 - x_1 = 0\ (m)}$.

B). In interval A: $t_1 = 0$, $t_2 = 2\ (s)$;

$x_1 = 10\ (m)$, $x_2 = 30\ (m)$;

average velocity: $v_{av} = \dfrac{\Delta x}{\Delta t}$

$= \dfrac{x_2 - x_1}{t_2 - t_1}$

$= \dfrac{30\ (m) - 10\ (m)}{2\ (s) - 0\ (s)}$

$= 10\ m/s$

C). In interval C, since the slope of x-t curve is negative (downward) at any time in C, the instantaneous velocity is negative in interval C.