1.) $v(5.5) = -.453$

$a(5.5) = -1.359$

the speed of particle is increasing $v(5.5)$, $a(5.5)$ are both negative

2) $$\frac{\int_0^6 v(t)\,dt}{6-0} = 1.949$$

3) $$\int_0^6 |v(t)|\,dt = 12.573$$

4) $v(t) = 0$ at $t = 5.196$

$v(t)$ changed + to −

$$x(5.196) = x(0) + \int_0^{5.196} v(t)\,dt$$

$$= 14.135$$

2) $\dfrac{H(5)-H(2)}{5-2} = \boxed{\dfrac{52-60}{5-2}\ \dfrac{^\circ C}{min}}$

b) The average value of temperature in °c from $0 \to 10$ minutes

$$\frac{1}{10}\int_0^{10} H(t)\,dt \approx$$

$$\frac{1}{10}\left[\frac{1}{2}(66+60)(2)+\frac{1}{2}(60+52)(3)+\frac{1}{2}(52+44)(4)+\frac{1}{2}(44+43)(1)\right]$$

c) $\int_0^{10} H'(t)\,dt = H(t)\Big|_0^{10} = H(10)-H(0)$

$=(43-66)^\circ C \to$ the change in temp from $t=0$ to $t=10$

(d) I need to $B(10)$

know

/

$$B(0) + \int_0^{10} B'(t)\,dt = B(10) = 34.183^\circ C$$

$(43 - 34.183)^\circ C$ cooler