PART A: Complete the following statements using the following words: • constant • negative • slope (2) • displacement • positive • zero

① The velocity-time graph for an object with a constant ✓ acceleration is a straight line with constant slope.

② The slope ✓ of the velocity-time graph for an object moving at a constant acceleration gives the value of the constant acceleration.

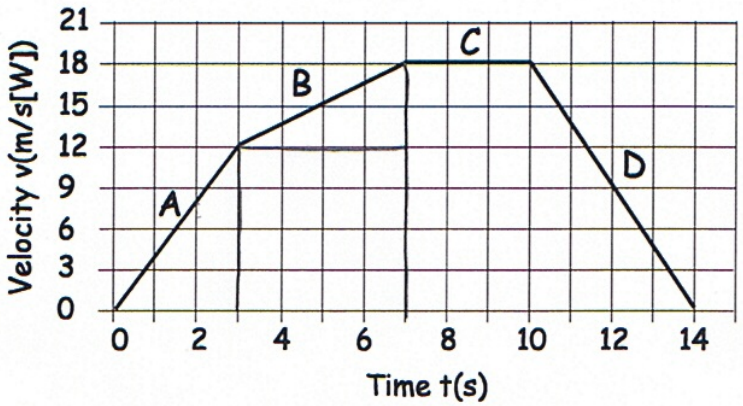
③ On a velocity-time graph
- ☞ a positive slope represents a positive ✓ acceleration,
- ☞ a zero slope represents a zero ✓ acceleration, and
- ☞ a negative slope represents a negative ✓ acceleration.

④ The average acceleration between any two points on a velocity-time graph = the slope ✓ of the straight line joining the two points.

⑤ Displacement ✓ can be determined by calculating the area beneath a velocity-time graph.

PART B: Answer questions 1 & 2 below in the space provided. If more room is needed use the back of this sheet or a separate sheet. Answer question 3 on the back of this sheet.

The following shows the velocity-time graph for a dandelion seed blown by the wind. The seed's velocity changes during the four intervals A, B, C, and D.



1. Calculate:

(a) the acceleration during each interval. (slope)

A $\frac{12}{3} = 4\ m/s^2$ ✓

B $\frac{6}{4} = 1.5\ m/s^2$ ✓

C horizontal = ~~0~~ ✓

D $-\frac{18}{4} = -4.5\ m/s^2$ ✓

(b) the displacement during each interval. (area)

A $\frac{1}{2}(3)(12) = 18\ m$ ✓

B $\frac{1}{2}(4)(6) + (4)(12) = 60\ m$ ✓

C $(3)(18) = 54\ m$ ✓

D $\frac{1}{2}(4)(18) = 36\ m$ ✓

(c) the final position of the dandelion seed.

$\Delta\vec{d}_T = d_A + d_B + d_C + d_D$

$\Delta\vec{d}_T = 168\ m\ [W]$ of starting position! //

2. What is the seed's (i) speed and (ii) velocity at each of the following times: (read off graph)

(a) 2 s
~ 8 m/s & 8 m/s[W] ✓

(b) 8 s
18 m/s & 18 m/s[W] ✓

(c) 12 s
9 m/s & 9 m/s[W] ✓

3. On the back of this sheet describe the motion illustrated in the graph.