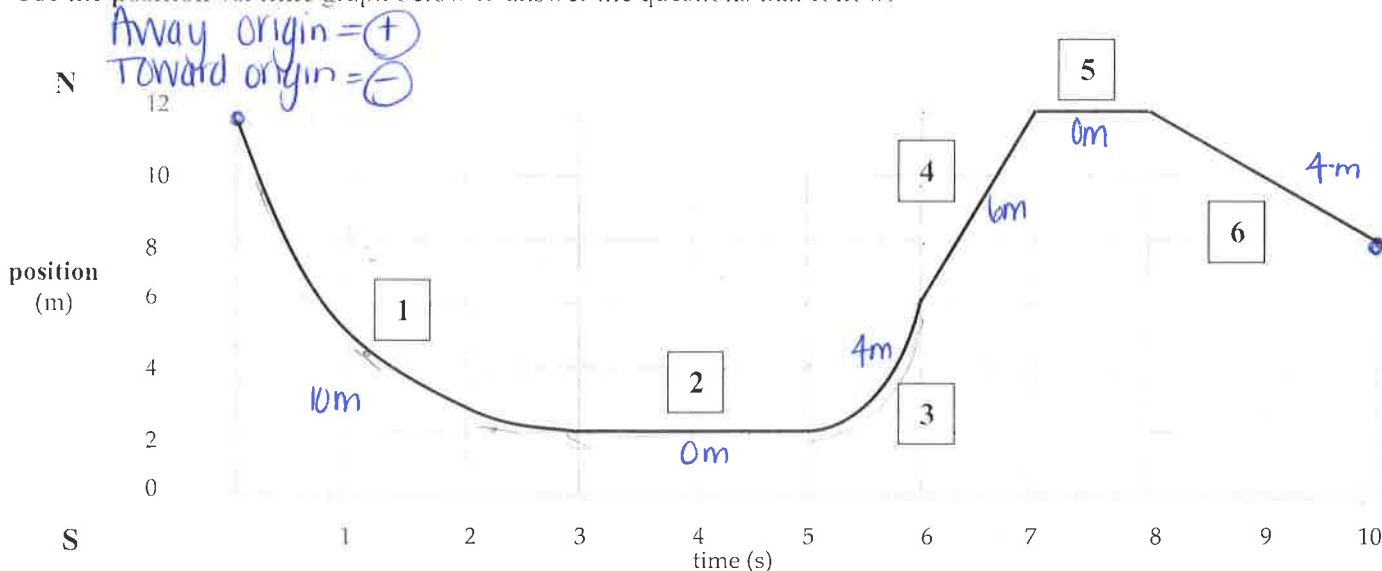


Use the position vs. time graph below to answer the questions that follow.



1. Describe the motion of the object during each interval.

- ① Slowing down negative ⊕
- ② at rest
- ③ speeding up ⊕
- ④ constant ⊕ velocity
- ⑤ at rest
- ⑥ constant ⊖ velocity

2. What is the position at 9 seconds?

10 m

3. What is the average velocity of the object from 3 s to 5 s?

$0 \frac{m}{s}$

4. What is the average velocity of the object from 6 s to 7 s?

$+6 \frac{m}{s}$

5. What is the average velocity of the object from 7 s to 8 s?

$0 \frac{m}{s}$

6. What is the average velocity of the object from 8 s to 10 s?

$-2 \frac{m}{s}$

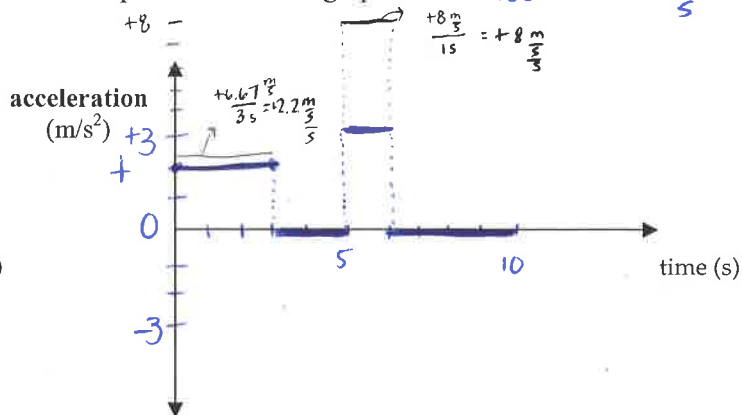
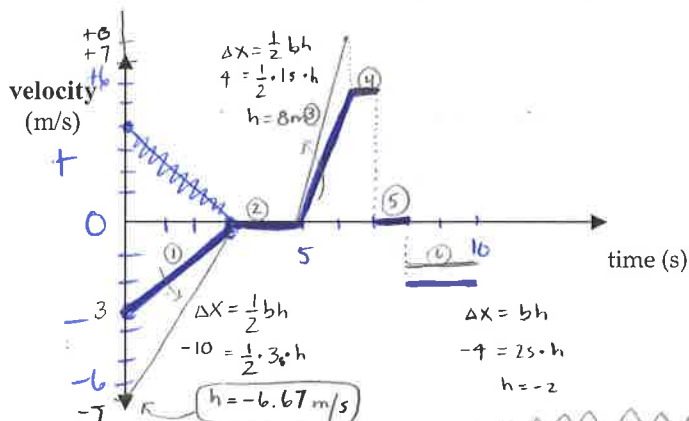
7. What is the average velocity for the entire 10 second interval of the graph?

$$V = \frac{\Delta X}{t} = \frac{4m}{10s} = 0.4 \frac{m}{s} \text{ South}$$

8. What is the average speed for the entire 10 second interval of the graph?

$$S = \frac{X}{T} = \frac{24m}{10s} = 2.4 \frac{m}{s}$$

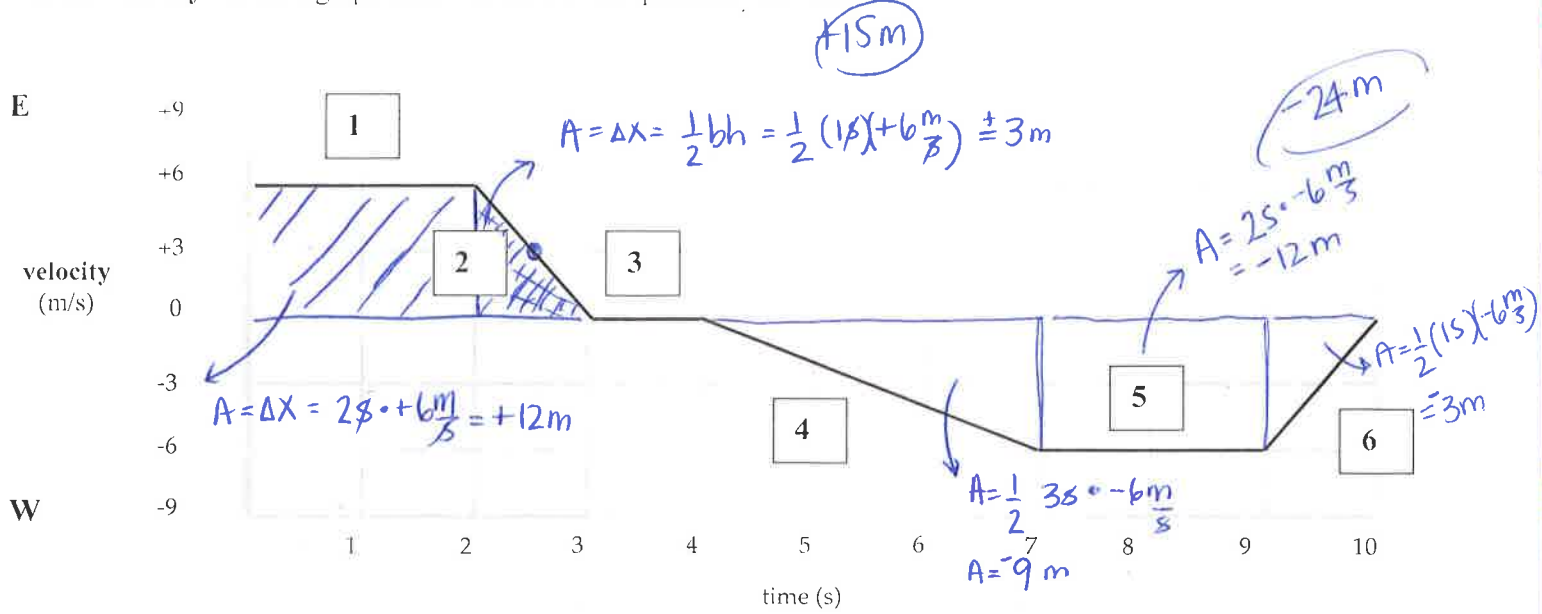
9. Draw the v vs. t and a vs. t graphs that correspond to the above position vs. time graph.



To get correct $\Delta X = -10m$

pencil → Actual velocities to get ΔX correct from xt

Use the velocity vs. time graph below to answer the questions that follow.



1. Describe the motion of the object during each interval.

- ① constant ⊕ velocity
- ② slowing down ⊕ / constant ⊖ acceleration
- ③ at rest
- ④ speeding up ⊖ / constant ⊖ accel.
- ⑤ constant ⊖ velocity
- ⑥ slowing down ⊖ / constant ⊕ accel.

2. What is the instantaneous velocity at 2.5 seconds?

$\oplus 3 \frac{m}{s}$

3. How far did the object travel during the first 3 seconds?

$\oplus 15 \text{ m}$

4. How far did the object travel during from 4s to 7 s?

$\ominus 9 \text{ m}$

5. During what interval(s) did it move with a constant velocity?

0-2s and 7-9s

6. Was/were the velocity/velocities while it moved at a constant velocity?

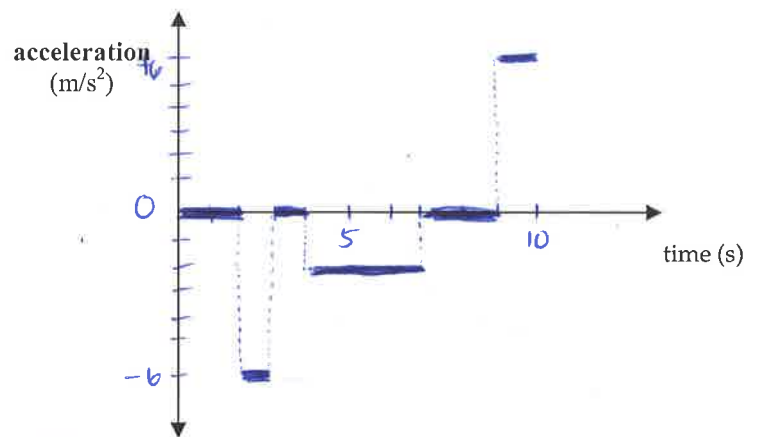
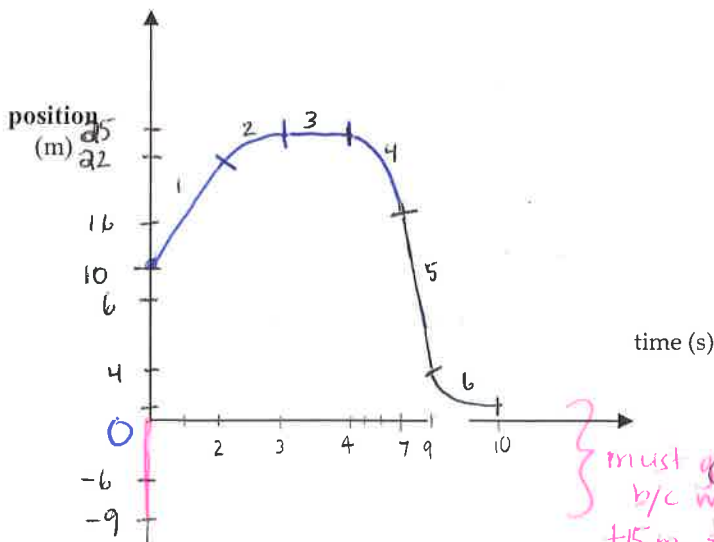
what

$\downarrow +6 \frac{m}{s}$ $\downarrow -6 \frac{m}{s}$

7. Determine the magnitude and direction (sign) of the acceleration for all periods when the vehicle accelerated.

② 2-3s : $-6 \frac{m}{s^2}$ ④ 4-7s : $-2 \frac{m}{s^2}$ ⑥ 9-10s : $+6 \frac{m}{s^2}$

8. Draw the x vs. t and a vs. t graphs that correspond to the above velocity vs. time graph.



must go below b/c marked \Rightarrow only if starting point is "0"
 $+15 \text{ m}$ & then -24 m