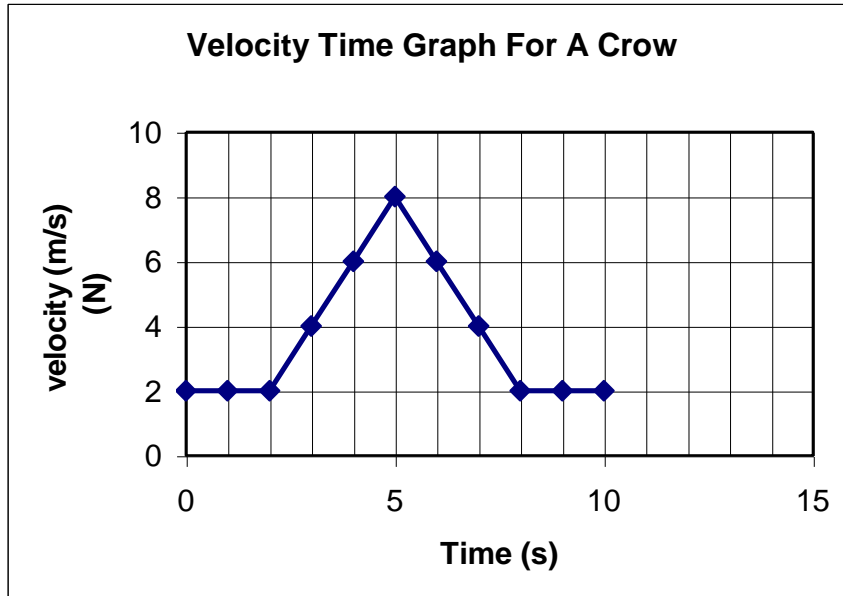


(9) An object is thrown vertically upwards from the Earth. While it is rising what is true about its velocity and acceleration?

- (a) Its velocity is downward and its acceleration is downward
- (b) Its velocity is upward and its acceleration is upward
- (c) Its velocity is downward and its acceleration is upward
- (d) Its velocity is upward and its acceleration is downward

(10) What is the acceleration of the following object at $t=7s$?



- (a) $0.7 \text{ m/s}^2 \text{ N}$
- (b) $0.7 \text{ m/s}^2 \text{ S}$
- (c) $2 \text{ m/s}^2 \text{ N}$
- (d) $2 \text{ m/s}^2 \text{ S}$

Part B: Short Answer (15 marks)

(1) A car travelling at 25.0 m/s slams on the brakes and stops in 65.2m. What is the car's acceleration? (3)

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(2) A ball is thrown upwards from a 45m high bridge at 17.8 m/s. What is the maximum height the ball reaches off the ground? (3)

(3) A falling object reaches a speed of 32.5 m/s in 3.4s. How far did it fall in this time? (2)

(4) A boat is sailing west at 60 km/h when there is a current of 25 km/h [S]. What is the boat's velocity with respect to the shore? Include a diagram with your answer (3)

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(4) a. A plane has an airspeed of 350 km/h. If it wants to travel due north and there is a 80 km/h [E] wind blowing, in what direction must the plane fly? Include a diagram in your answer. (2)

b. How long will it take the plane to fly 650 km [N]? (2)