Name _____

Date _____

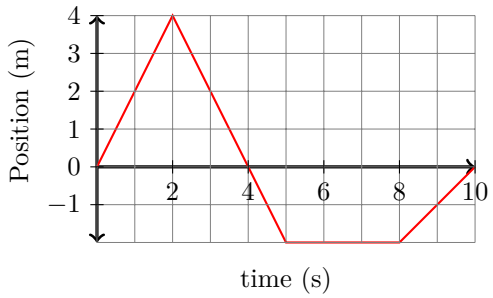
Mr Rawson

ISTANBUL INTERNATIONAL COMMUNITY SCHOOL
IICS SINCE 1911

Velocity II

1. If you live 20.0 km from your school and the bus takes 0.77 hours to reach the school driving due east, what is the average velocity of the bus? (in $m \cdot s^{-1}$)

2. The graph below gives the position-time graph for a squirrel running along a clothesline.



   A. What is the squirrel's displacement during the time interval from t = 0 to t = 3.0 s?

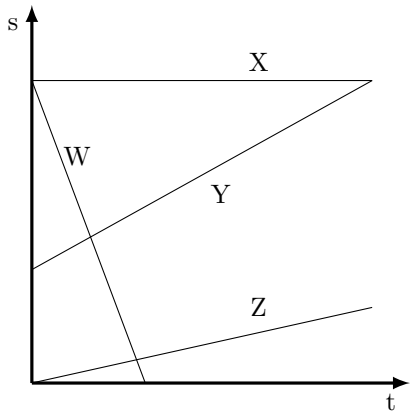
   B. What is the squirrel's average velocity during this interval?

   C. What is the squirrel's velocity at t = 2 seconds?

3. A ball is released from rest near the surface of the Moon. Which one of the following quantities increases at a constant rate?

   A. Only distance fallen
   B. Only speed
   C. Only speed and distance fallen
   D. Only speed and acceleration

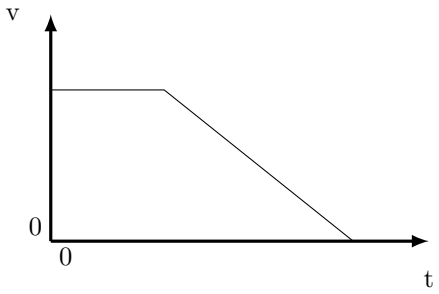
4. Four cars W, X, Y and Z are on a straight road. The graph below shows the variation with time t of the distance s of each car from a fixed point.



Which car has the greatest *speed*?

A. W
B. X
C. Y
D. Z

Questions 5 and 6 relate to the image below:

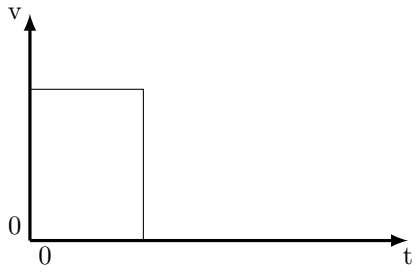


5. The diagram above shows the variation with time t of the velocity v of an object. The area between the line of the graph and the time-axis represents:

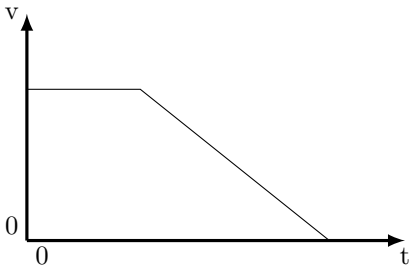
A. the average velocity of the object.
B. the displacement of the object.
C. the impulse acting on the object.
D. the work done on the object.

6. The diagram above shows the variation with time t of the velocity v of an object. Which one of the following graphs shows the variation with time t of the acceleration a of the object?

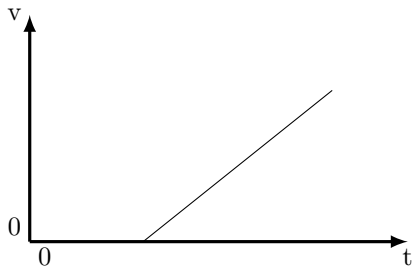
A.



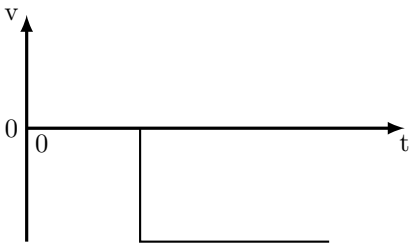
B.



C.

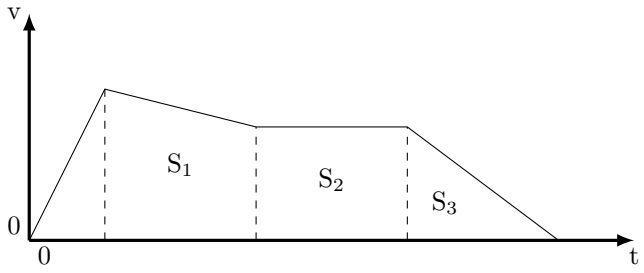


D.



7. Emily takes a trip, driving with a constant velocity of 89.5 km/h to the north except for a 22 min rest stop. If Emily's average velocity is 74.8 km/h to the north, how long does the trip take, in hours? *(Give the answer to 2 decimal places; your answer should be between 2.10 and 2.30 hours.)*

8. The variation with time t of the speed v of a car moving along a straight road is shown below.



Which area, S_1, S_2 or S_3, or combination of areas, represents the total distance moved by the car during the time that its speed is reducing?

A. S_1

B. S_3

C. $S_1 + S_3$

D. $S_1 + S_2 + S_3$