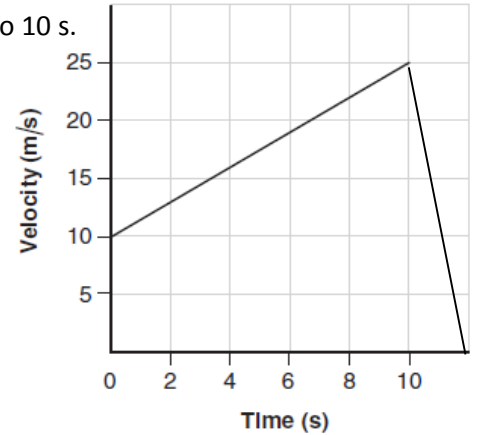


Physics – Chapter 9 Pretest

1. From the graph on the right, determine the object's acceleration between 0 to 10 s.

Equation work answer with units



2. From the graph on the right, determine the object's acceleration between time interval 10 to 12 s.

Equation work answer with units

3. Sketch the graph of the following situation: A car at rest starts moving backwards. The car picks up speed and then begins to slow down and stop. The car then begins to move forward faster than it was moving backwards until it reaches a constant speed (assume constant accelerations for straight lines)



Indicate on the graph + / - / 0 velocity and + / - / 0 acceleration for each line segment.

4. A train has an initial velocity of 2 m/s [N]. It speeds up to 7 m/s [N]. Find the change in velocity.

Equation work answer with units description of motion

5. An object has a change in velocity of - 8 m/s. If the object had an initial velocity of + 14 m/s, determine the final velocity.

Equation work answer with units description of motion

6. A car had a change in velocity of 6 m/s [W]. If the car's final velocity is 20 m/s [W], determine the car's initial velocity.

Equation work answer with units description of motion

7. An object travels south at 10 m/s. If the object has a change in velocity of + 10 m/s, determine the objects final velocity.

Equation

work

answer with units

description of motion

8. A train is travelling at 25 m/s [E]. If the train is travelling east at 25 m/s after 30 min, determine the change in velocity.

Equation

work

answer with units

description of motion

9. A player kicks a soccer ball, changing its velocity from 0 m/s to + 8 m/s in 0.025 s. Determine the acceleration of the ball.

Equations

work

answer with units

10. How long does it take a car to change its velocity by + 20 m/s at an acceleration rate of 5 m/s^2 ?

Equations

work

answer with units

11. An object accelerates at 10 m/s^2 [E] for 6.4 s. Determine the change in velocity.

Equations

work

answer with units

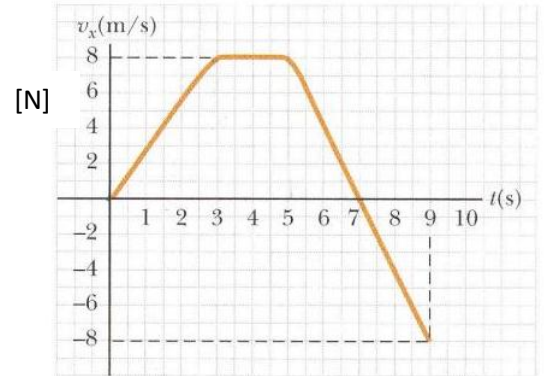
12. A football is kicked straight up at an initial velocity of 25 m/s. Determine the final velocity after 2 s. Assume gravity is 9.8 m/s^2 .

Equations

work

answer with units

13. An object is in motion according to the graph on the right.



a. Determine the change in velocity from 0 to 3 s.

b. Determine the acceleration from 0 to 3 s.

c. Determine the object's velocity and acceleration at 4 s.

d. Determine the object's change in velocity from 5 to 7 s.

e. Determine the object's acceleration from 5 to 7 s.

f. Determine the object's acceleration from 7 to 9 s.

g. **Describe** the motion of the object from 0 to 9 s.

14. Positive (+) and negative (-) are used to represent the direction of an object's velocity and acceleration. For each combination of initial velocity and acceleration note whether the object is speeding up or slowing down.

Initial Velocity	Acceleration	Speeding up or slowing down
a) positive (+)	Positive (+)	
b) positive (+)	Negative (-)	
c) Negative (-)	Positive (+)	
d) Negative (-)	Negative (-)	