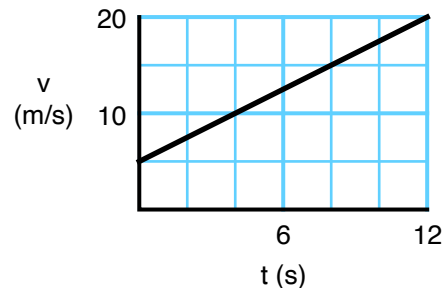


Constant Acceleration Problems

1. A car on the highway constantly accelerates from an initial speed of 20 m/s to a final speed of 30 m/s over a time of 5 seconds.
 - a. What was the car's acceleration?
 - b. What was the car's average speed?
 - c. How far did the car travel during this 5 seconds?

2. The velocity vs time graph for an object is shown to the right.
 - a. What was the object's acceleration?



- b. What was the object's average speed?
 - c. How far did the object travel during this time?
3. A Boeing 767 airplane can accelerate at a rate of 3.3 m/s^2 . If a 767 starts from rest,
 - a. How many seconds will it take to reach a take-off speed of 100 m/s?
 - b. What would be the average speed of the plane over this interval?
 - c. How far would it travel in that time?

Constant Acceleration Problems

4. Amir constantly accelerates from rest, covering a distance of 20 meters in a time of 3.0 seconds.
 - a. What was his final velocity? (*Hint: find the average speed first.*)

 - b. What was Amir's acceleration?

5. Yuying is riding her bike with a speed of 5 m/s. She then speeds up at a constant rate of 2 m/s every second until she reaches a speed of 10 m/s.
 - a. How long will it take her to reach a speed of 10 m/s?

 - b. What is her average speed while speeding up?

 - c. How far will she travel while speeding up?

6. Chelsea is rollerblading down Charter Road with a velocity of 18 m/s when a small child jumps out in front of her, and she attempts to stop. Her acceleration is a constant rate of -1.5 m/s^2 ,
 - a. After 4 seconds, how fast is Chelsea going?

 - b. How many total seconds will it take her to stop?

 - c. How far (total) does she travel before she comes to rest?

 - d. Why is her acceleration negative?

Constant Acceleration Problems

Answers:

1. a) 2 m/s^2 b) 25 m/s c) 125 m
2. a) 1.25 m/s^2 b) 12.5 m/s c) 150 m
3. a) 30.3 s b.) 50 m/s c) 1515 m
4. a) 13.2 m/s b) 4.4 m/s^2
5. a) 2.5 s b) 7.5 m/s c) 18.75 m
6. a) 12 m/s b) 12 s c) 108 m d) *because she is going forwards and slowing down*