# Cp physics ch 3 practice test (Glencoe)

Multiple Choice
Identify the choice that best completes the statement or answers the question.

_____ 1. A man starts his car from rest and accelerates at 1 m/s² for 2 seconds. He then continues at a constant velocity for 10 seconds until he sees a tree blocking the road and applies brakes. The car, decelerating at 1 m/s², finally comes to rest. Which of the following graphs represents the motion correctly?
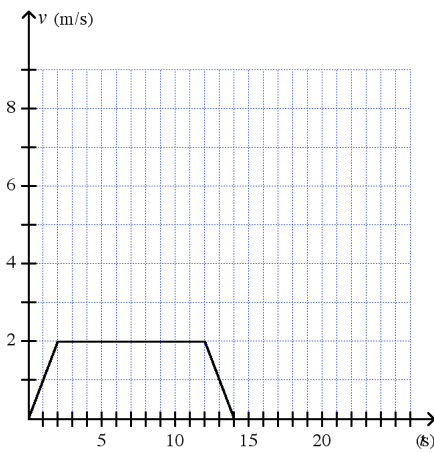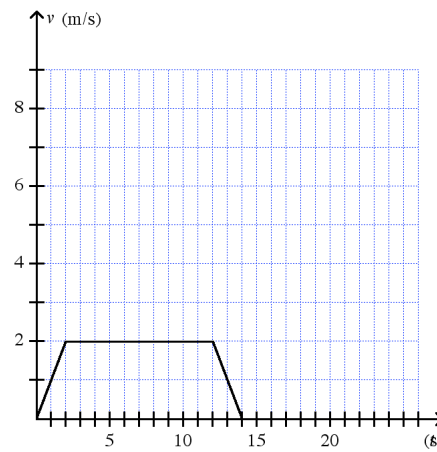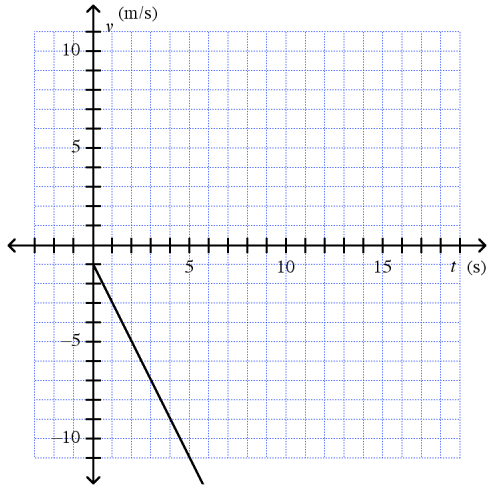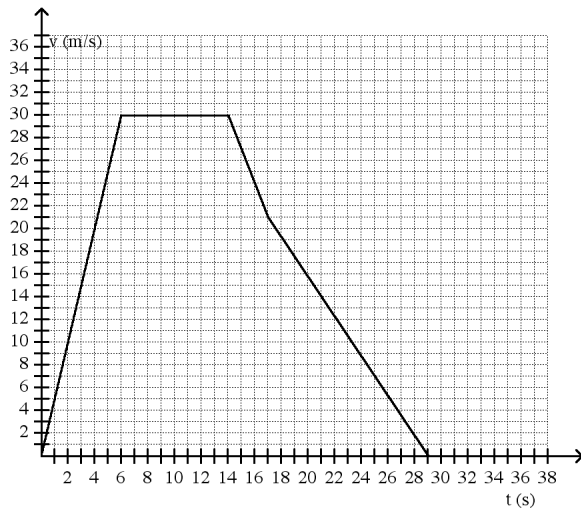
a.
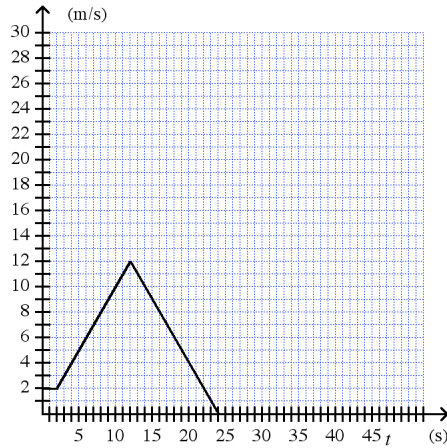
c.
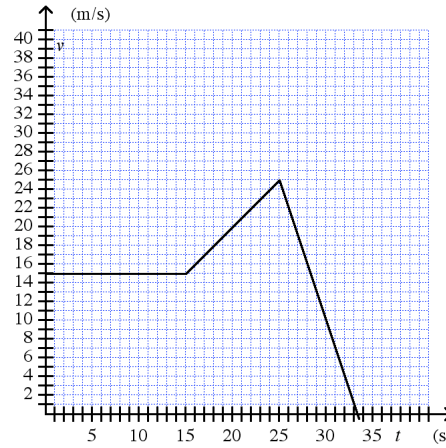
b.

d.

Short Answer

2. The velocity-time graph of a car's motion is given below. Plot the corresponding acceleration-time graph.


Problem

3. The velocity-time graph of the motion of a particle is shown below. Calculate the total displacement of the particle from 0 to 29 seconds.


4. A car starts from rest with an acceleration of 2.84 m/s² at the instant when a second car moving with a velocity of 25.7 m/s passes it in a parallel line. How far does the first car move before it overtakes the second car?

5. A ball is thrown vertically upward with a speed of 1.53 m/s from a point 4.21 m above the ground. Calculate the time in which the ball will reach the ground.

6. A ball is thrown vertically upward with a speed of 1.86 m/s from a point 3.82 m above the ground. Calculate the time in which the ball will reach the ground.

7. Julia throws a ball vertically upward from the ground with a speed of 5.89 m/s. Andrew catches it when it is on its way down at a height of 1.27 m from the ground. After how much time does Andrew catch the ball?

8. The graph below shows how the velocity of a rolling ball changes with time. Calculate the acceleration of the ball.
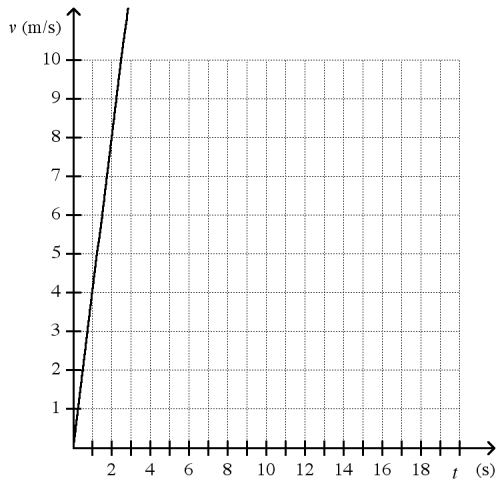
9. A car accelerates from rest at 5 m/s² for 5 seconds. It moves with a constant velocity for some time, and then decelerates at 5 m/s² to come to rest. The entire journey takes 25 seconds. Plot the velocity-time graph of the motion.

10. The graph below represents the velocity-time variation of a car's motion.
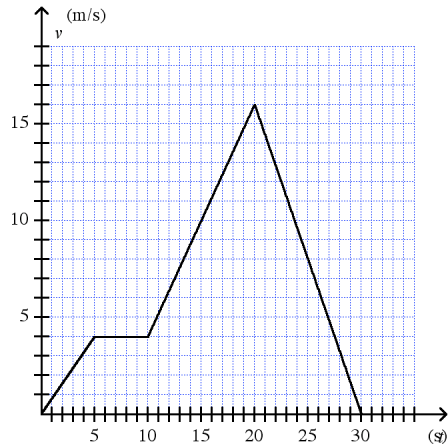
Use the graph to find:
   a) The acceleration of the car between $t = 0$ s and $t = 5$ s.
   b) The acceleration of the car between $t = 5$ s and $t = 10$ s.
   c) The acceleration of the car between $t = 10$ s and $t = 20$ s.
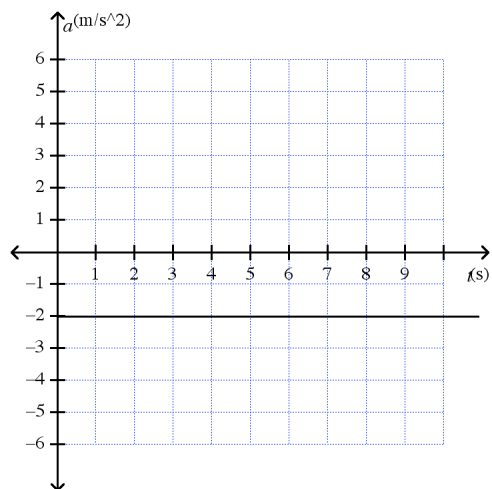   d) The acceleration of the car between $t = 20$ s and $t = 30$ s.

11. A boy throws a ball vertically upward with a speed of 19 m/s. Calculate the speed of the ball when it is at a height equal to 0.77 times the maximum height reached by the ball.

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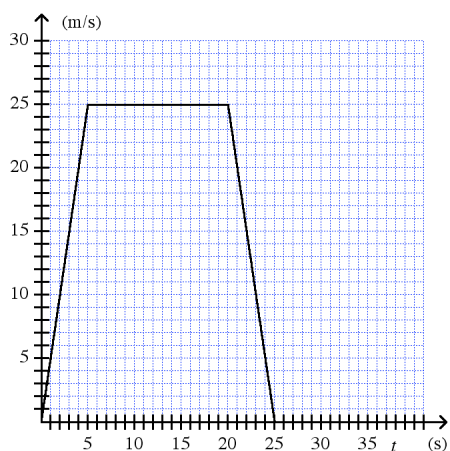# Answer Section

MULTIPLE CHOICE

1. B

SHORT ANSWER

2.

PROBLEM

3. 532.5 m
4. 465 m
5. 1.10 s
6. 1.093 s
7. 0.92 s
8. 4 m/s²

9.

10.
     a) 0.80 m/s^2
     b) 0 m/s^2
     c) 1 m/s^2
     d) −1.6 m/s^2

11. 9.1 m/s