

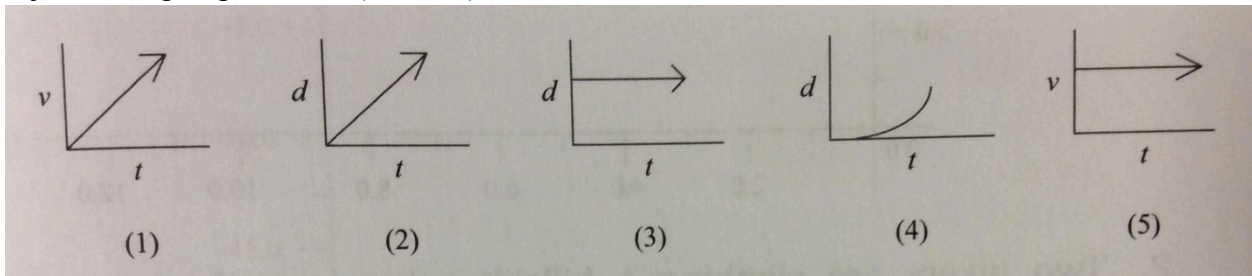
Name _____

Chapter 2 Test

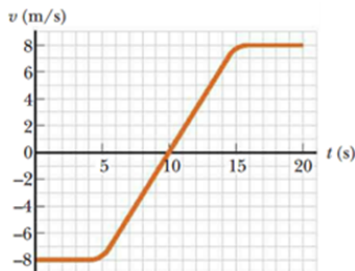
"I have neither given nor received an unfair advantage on this test."

Signed _____ Date _____

1. A feather, initially at rest, is released in a vacuum near Earth's surface. Which of the following statements is correct?
- The maximum speed of the feather is 9.8 m/s .
 - The acceleration of the feather decreases until it moves with constant (terminal) velocity.
 - The acceleration of the feather remains constant during the fall.
 - The acceleration of the feather increases during the fall.
 - The acceleration of the feather is zero.
2. Below are five graphs that could represent the motion of an object moving in one dimension. Which of the following combinations of the numbered graphs best represents an object undergoing constant (nonzero) acceleration?



- graphs (2) and (4)
 - graphs (1), (2), and (4)
 - graphs (1) and (4)
 - graphs (1), (4), and (5)
 - graph (4) only
3. Below is the velocity vs. time graph of a cart moving along a track. Find:
- The instantaneous acceleration at 10 s.
 - The time interval(s) when the object is speeding up. What is the acceleration during this time period?



4. Two hikers are climbing a hillside when one throws a 9.0- kg backpack straight upward with a velocity of 20.0 m/s. The second hiker, who has run to an outcrop, manages to catch the backpack while it is descending and at a location that is 5.0 m above the point from which it was thrown.

- Determine the velocity of the backpack the moment it was caught by the other hiker.
- Determine the amount of time the backpack was in the air.
- Determine the backpack's average velocity.
- Determine the maximum height the backpack reached relative to where it was thrown.
- On the axes provided below, accurately sketch the backpack's velocity and acceleration during its time in the air until the moment before it is caught.

