EXAM 1 REVIEW

Things to commit to memory:

- Chapter 1
  - SI Units: What are they and how were they derived?
  - Unit Conversions: Know what the prefixes mean.
  - Definitions of precision and accuracy
  - Sig fig rules
- Chapter 2
  - Know the definitions of
    - Vectors and scalars
    - All the kinematic variables
  - Know how to interpret the various graphs
    - Position VS Time
    - Velocity VS Time
    - Acceleration VS Time
  - Vf_y at the max height = 0
- Chapter 3
  - Same as chapters 1 and 2

Resources to check out if you need help with the content:

- Orgo chem tutor
- Chad's Prep
- AK Lectures

Disclaimer: I picked out questions that will emphasize important concepts. This by no means will cover everything for Exam 1 and it shouldn't be your only study material.

Other things to Study:

1. Study set questions
2. Ppt questions
3. Classwork problems
4. PAL
5. Book problems

The speed of sound is measured to be 342 m/s on a certain day. What is this in km/h?

If your speedometer reads 60 km/h with 2.2% uncertainty, what is the range of speeds you could be going?

A student drove to the university from her home and noted that the odometer reading of her car increased by 12.0 km. The trip took 18.0 min.
a. What was her average speed in km/h?
b. If the straight-line distance from her home to the university is 10.3 km in a direction 25° south of east, what was her average velocity in km/h?
c. If she returned home by the same path 7 h 30 min after she left, what were her average speed and velocity for the entire trip?

A ball is shot straight up from the surface of the earth with an initial speed of 18.0 m/s. Neglect any effects due to air resistance.

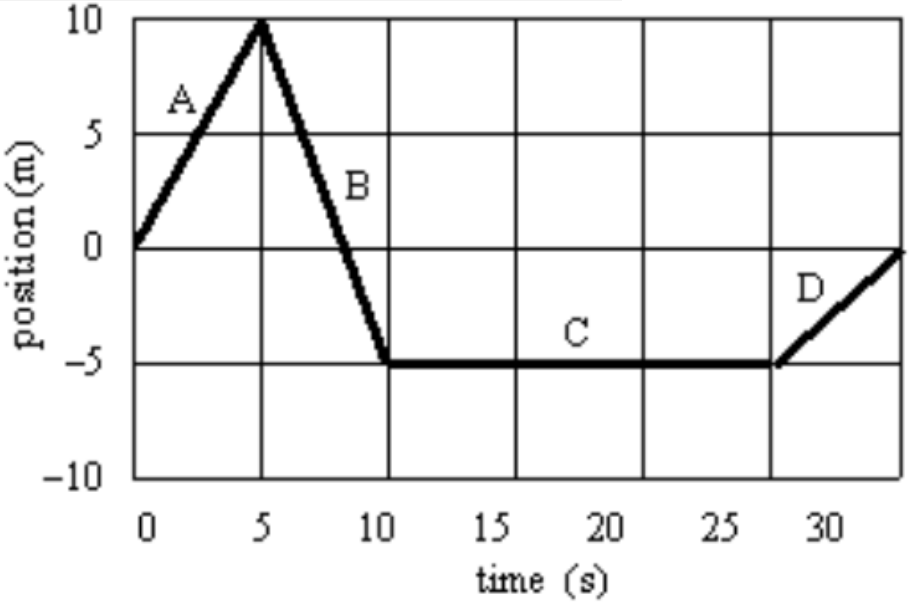
a. What is the velocity of the ball when it returns to the point of release?

b. What is the time taken for the ball to reach the maximum height?

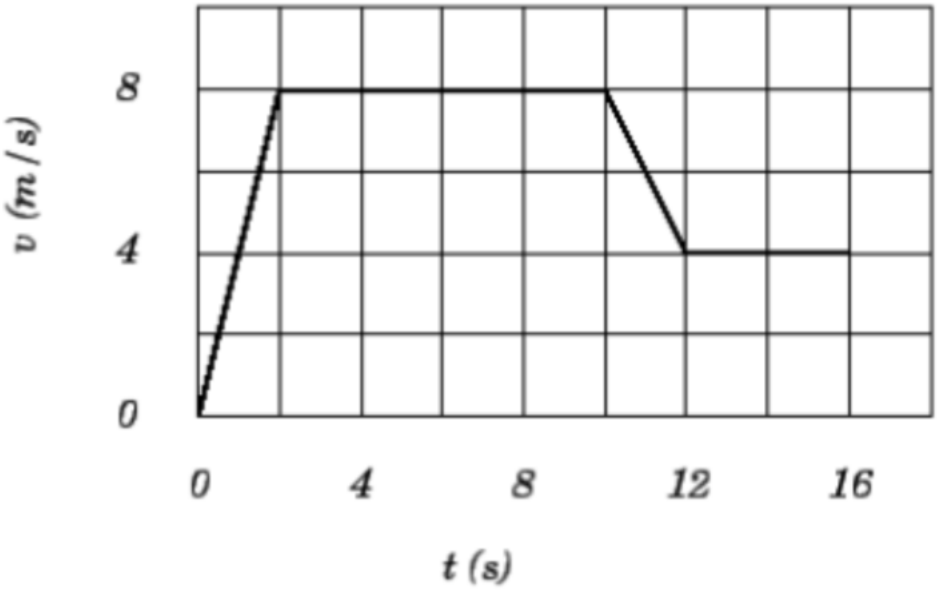
c. What is the time taken for ball when it returns to the point of release?

d. What is the maximum height reached?

For an object moving along the x-axis, the figure shows position versus time graph. Various segments of the graph are identified by the letters A, B, C, and D. Determine the average velocity at 6.0 s.



An object is moving along a straight line. The graph below shows velocity as a function of time. What is the acceleration of the object in the interval from t = 10 s to t = 12 s?



A vector has an x component of -25.0 units and a y component of 40.0 units. Find the magnitude and direction of this vector.

A person walks 25.0° north of east for 3.10 km. How far would she have to walk due north and due east to arrive at the same location?

A ball is thrown horizontally from the top of a 60.0-m building and lands 100.0 m from the base of the building. Ignore air resistance.
(a) How long is the ball in the air?
(b) What must have been the initial horizontal component of the velocity?
(c) What are the vertical and horizontal components of the velocity just before the ball hits the ground?
(d) What is the magnitude and direction of the velocity of the ball just before it hits the ground?

A ball is thrown from the top of a building. The ball is given an initial velocity of 20.0 m/s at an angle of 30.0° below the horizontal. The height from which the ball is thrown is 45.0 m above the ground.

(a) What is the magnitude and direction of the ball just before it strikes the ground.

(b) How long does it take the ball to reach the ground?

(c) How far horizontally from the base of the building does the ball strike the ground?

(d) What is the magnitude and direction of velocity of the ball when it reaches the height of 35.0 m?

(e) How much time does it take the ball to reach a height of 35.0 m?