

Chapter 4 HW

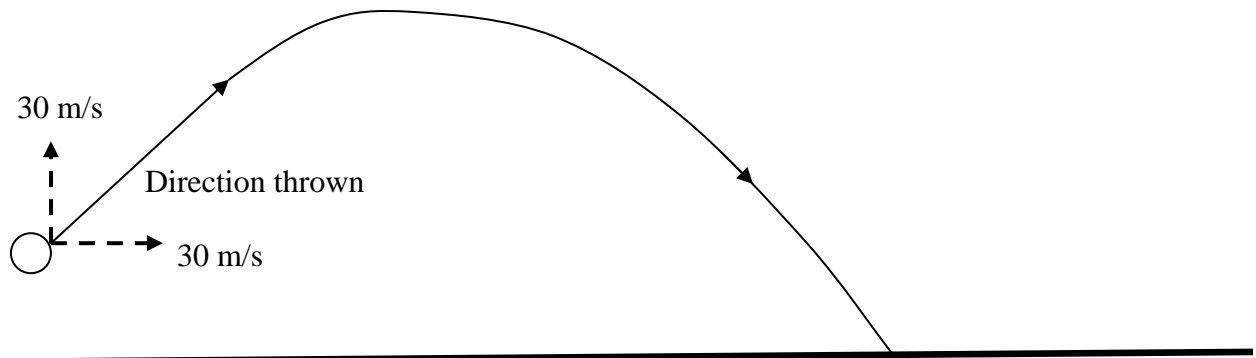
Review Questions: 7, 8, 24, 28

Exercises: 4, 17, 23

Problems: 2, 5

Additional:

- A. At what distance from earth is the gravitational force on an object zero?
- B. Why are all tides greatest at the time of a full or new moon?
- C. What would be the path of the moon if somehow all gravitational forces on it became zero?
- D. The Earth and the Moon are attracted to each other by gravitational force. Does the more massive Earth attract the less massive Moon with a force that is greater, smaller, or the same as the force with which the Moon attracts the Earth?
- E. A baseball is thrown as shown in the diagram below. The initial velocity is 30 m/s in the vertical and 30 m/s in the horizontal. Use 10 m/s^2 for the acceleration due to gravity and there is no air resistance.



- What happens to the horizontal component of the velocity as the ball rises?
 - What happens to the vertical component of the velocity as the ball rises?
 - What is the vertical velocity of the ball 1 second after it is thrown?
 - When the ball drops back to its original height, what is the vertical velocity?
 - If the maximum height of the ball is 5 meters, how far will the ball travel in the horizontal before it hits the ground, after reaching maximum height?
- F. How old would you be if you lived on Mars?