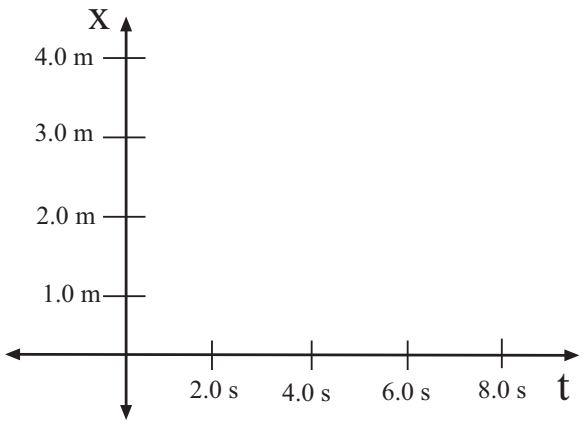
Name_____

Phys 2010 (NSCC), Spring 2007
Problem Set #2

1. A particle moves from $x = +4.50$ m to $x = -7.80$ m in 3.7 s. What is its average velocity during that period?

2. A particle starts at position $x_0 = -4.0$ m (at $t = 0$) and moves with constant velocity $v = +1.6 \frac{\text{m}}{\text{s}}$. What is its position at $t = 6.0$ s?

3. If a particle starts at position $x = +3.0$ m and moves with velocity $v = -2.00\,\frac{\text{m}}{\text{s}}$, sketch the graph of its motion in the space at the right.

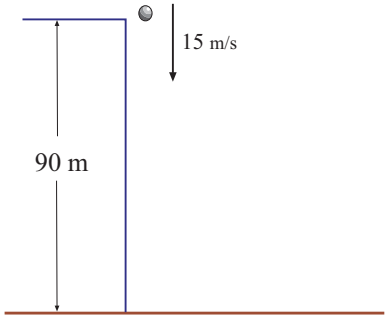


4. A car moving along a straight line has a speed of $20.0\,\frac{\text{m}}{\text{s}}$. it undergoes a constant deceleration so that after moving 105 m its speed is reduced to $5.00\,\frac{\text{m}}{\text{s}}$. (a) What is the magnitude of the car's acceleration? (b) How long does it take the car to slow from $20.0\,\frac{\text{m}}{\text{s}}$ to $5.00\,\frac{\text{m}}{\text{s}}$?

5. With what speed must you throw a rock straight upward so that it attains a maximum height of 200 m?

6. For the rock in problem 5, what is the total time it spends in flight?

7. If we throw a rock straight down with a speed of 15 $\frac{\text{m}}{\text{s}}$ from a height of 90 m, what is its *velocity* when it hits the ground?



8. For the rock in problem 7, how long does it take to strike the ground?