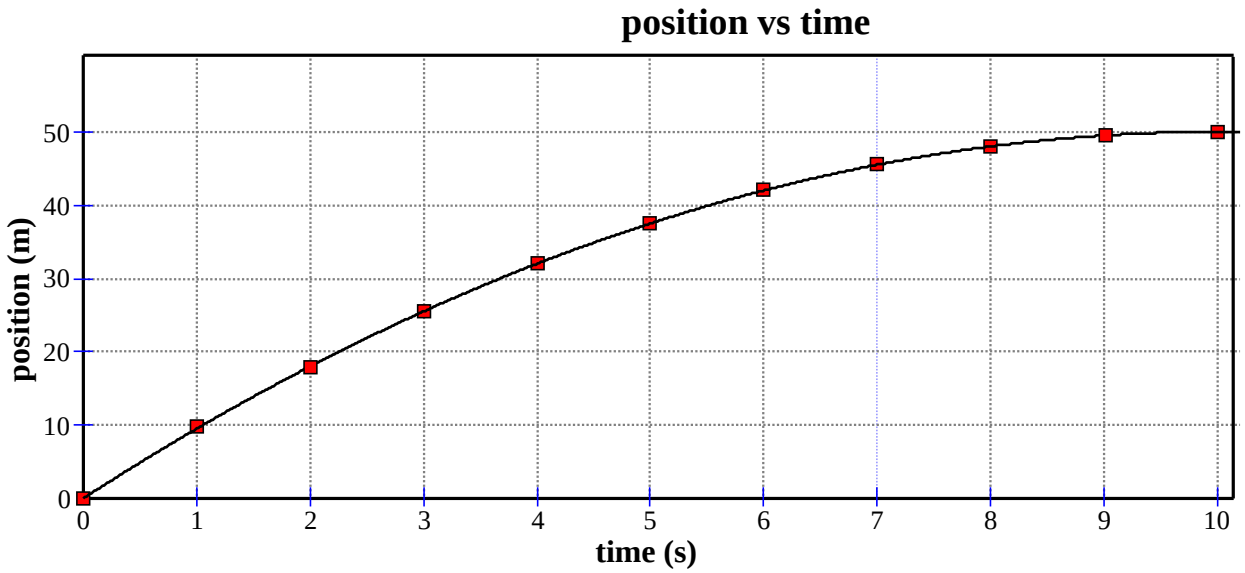
Name_____

Date_____ Pd____

Unit 2 Review

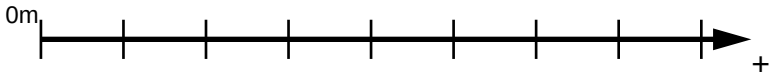


1. Use the graph above to answer the following questions:

a. Give a written description to describe the motion of this object.

b. Draw the motion map for the object. Include velocity and acceleration vectors.

vel:

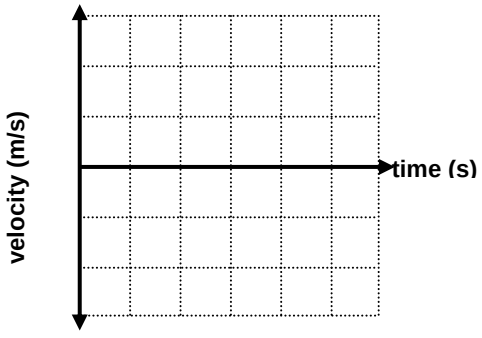


acc:

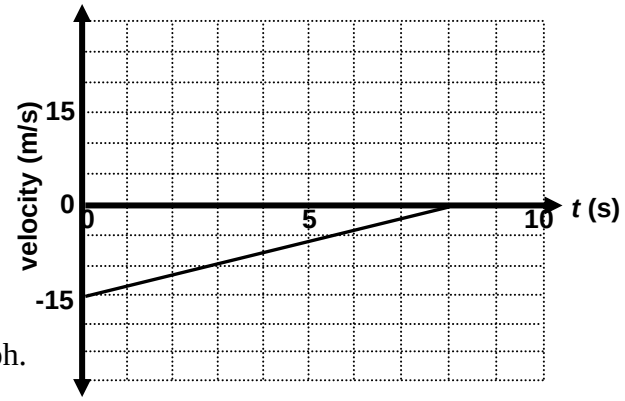
c. Determine the instantaneous velocity of the object at **t** = 2 s and explain how you did it.

d. Assume the initial velocity was 10 m/s, determine the acceleration of the object.

e. Sketch a corresponding velocity time graph for the graph above.



2. Use the graph to answer the following questions.



a. Describe the motion of the object.

b. Determine the acceleration of the object from the graph.

c. Shade the portion of the graph that represents the displacement of the object from 2 to 6 seconds.

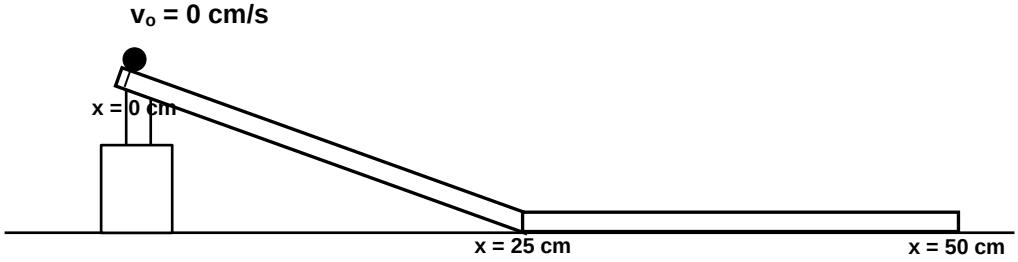
d. Calculate the velocity of the object at 2 seconds and at 6 seconds. (No you are not allowed to just take the values off the graph.)

e. Calculate the object's displacement from 2 to 6 seconds.

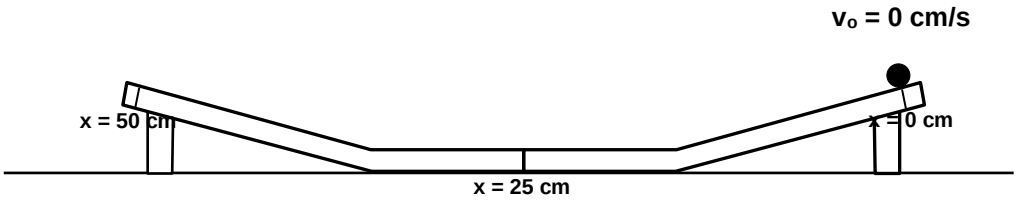
3. A car, initially at rest, accelerates at a constant rate of 4.0 m/s^2 for 6 s. How fast will the car be traveling at **t** = 6 s?

4. A tailback initially running at a velocity of 5.0 m/s becomes very tired and slows down at a uniform rate of 0.25 m/s^2. How fast will he be running after going an additional 10 meters?

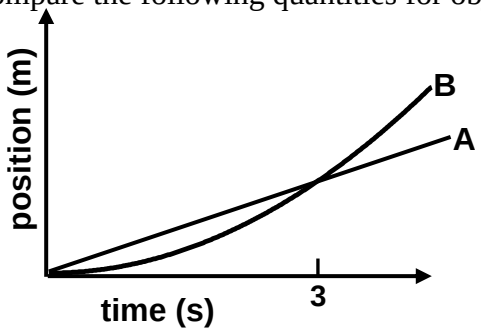
5. Draw a motion map along the ramp for the motion of the ball when released from rest.



6. Draw a motion map along the ramp for the motion of the ball when released from rest.



7. Using the graph compare the following quantities for objects A and B. **Is A > B, A < B, or A = B.**



a. **Displacement** from 0 to 3 s _____ How do you know?

b. **Displacement** from 0 to 1.5 s _____ How do you know?

c. **Displacement** from 1.5 to 3 s _____ How do you know?

d. **Average** velocity from 0 to 3 s _____ How do you know?

e. **Average** velocity from 0 to 1.5 s _____ How do you know?

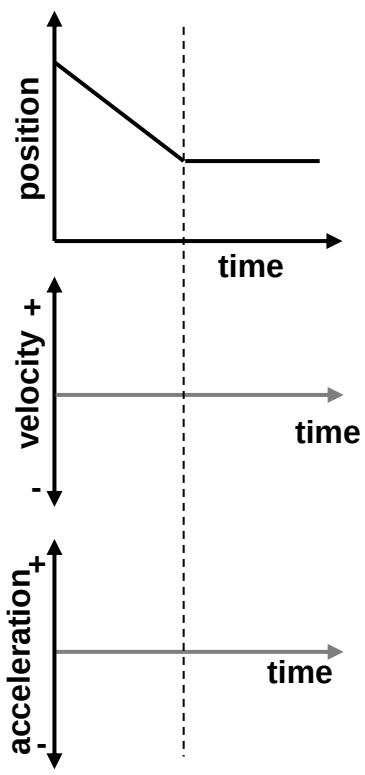
f. **Average** velocity from 1.5 to 3 s _____ How do you know?

g. **Instantaneous** velocity at 3 s _____ How do you know?

h. **Instantaneous** velocity at 0 s _____ How do you know?

i. If the motion of B is uniformly accelerated, at what time will both graphs have exactly the same slope? Explain.

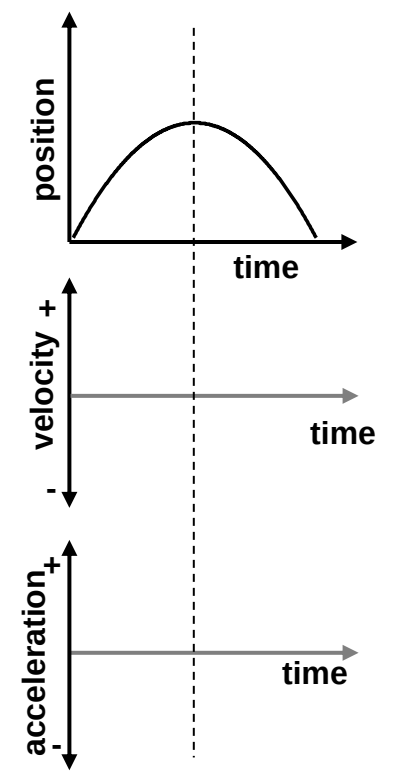
8. For each of the position vs time graphs shown below, draw the corresponding **v** vs **t**, **a** vs **t** , and motion map.



vel:

0m +

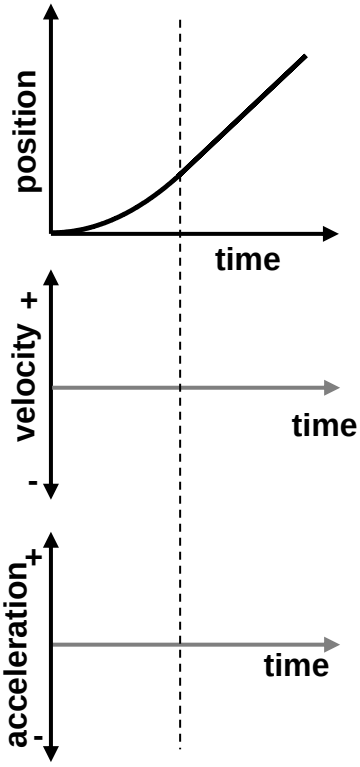
acc:



vel:

0m +

acc:



vel:

0m +

acc: