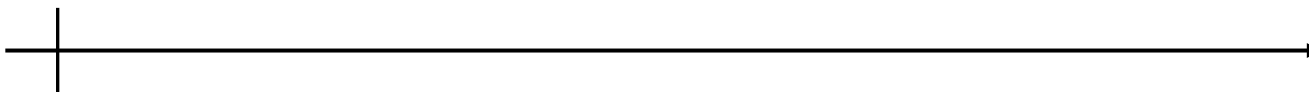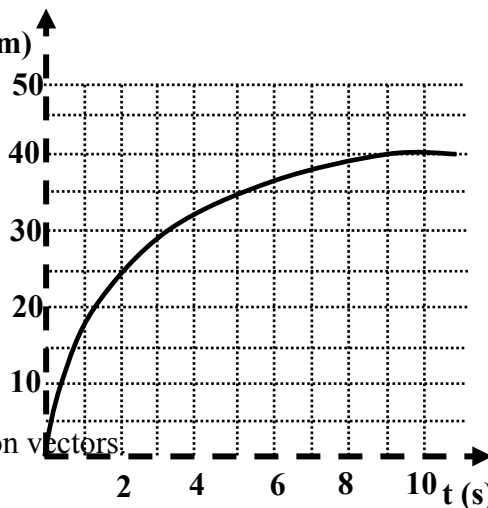# UNIT III: Review

Name:_____ **#:**_____

Use the graph below to answer questions #1-4 that follow:

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

2. Explain how you could determine the instantaneous velocity of the object at **t** = 2 s.

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

4. Assume the initial velocity was 50 m/s; determine the acceleration of the object.

Initial Information	Formula	work (w/ units)

answer:_____

5. A Pontiac Trans-Am, 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?

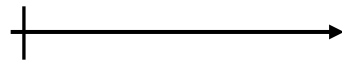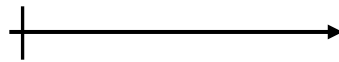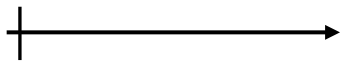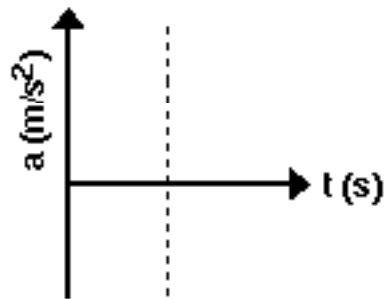| Initial Information	Formula	work (w/ units)

answer:_____

6. 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?
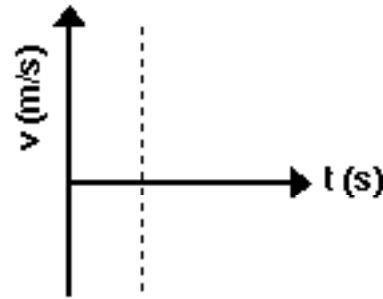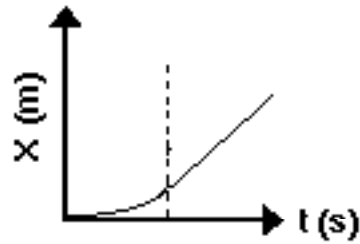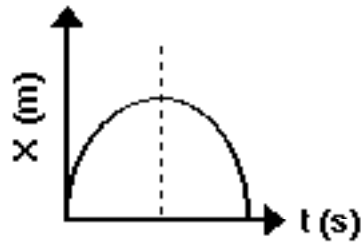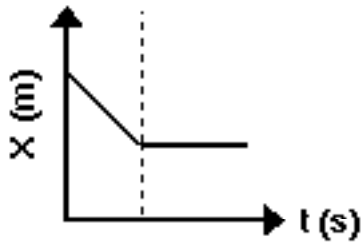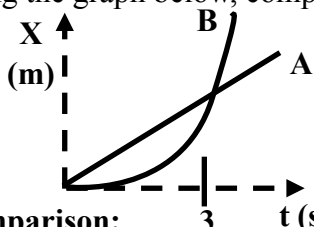
Initial Information	Formula	work (w/ units)

answer:_____

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

x (m) vs t (s)	x (m) vs t (s)	x (m) vs t (s)
v (m/s) vs t (s)	v (m/s) vs t (s)	v (m/s) vs t (s)
a (m/s²) vs t (s)	a (m/s²) vs t (s)	a (m/s²) vs t (s)
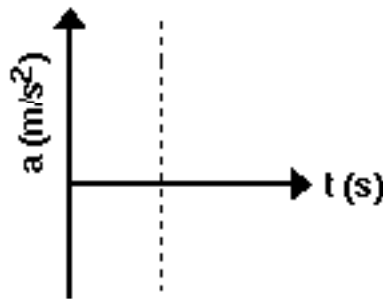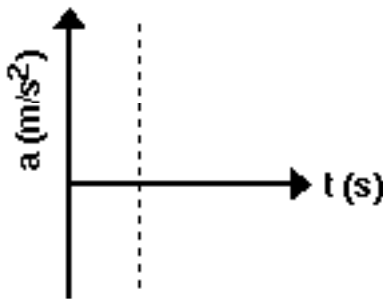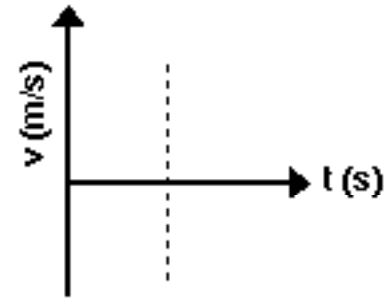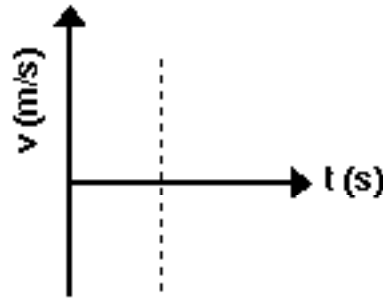
8. Using the graph below, compare the kinematic behavior of the two objects.

X (m), B, A, 3, t (s)

Comparison: is A > B, A < B, or A = B,   **How do you know?**

a. Displacement at 3 s

b. **Average** velocity from 0 - 3 s

c. **Instantaneous** velocity at 3 s