1. Make a five-dot motion diagram for an object with constant velocity moving from the left to the right.

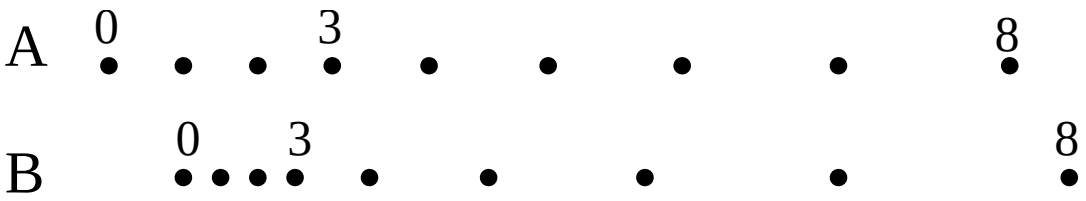
2. Make a five-dot motion diagram for an object with constant velocity moving from the right to the left. Let the speed of the object be the same as in question 1.

3. Make a five-dot motion diagram for an object going from left to right and speeding up. Assume that the velocity at time zero is non-zero, and assume that the magnitude of acceleration is constant.

4. Make a five-dot motion diagram for an object going from right to left and slowing down. Assume that the final velocity is non-zero, and assume that the magnitude of acceleration is constant. Furthermore, let the final speed equal the initial speed in question 3, and let the amount of acceleration also be the same as in question 3.

5. Make a five-dot motion diagram for an object which is accelerating by changing only its direction. Let the object be turning right and let the magnitude of the object's acceleration be constant. Let the object enter your page in the lower left, and exit at the lower right.

6. The figure shows nine frames from the motion diagrams of two cars. Both cars begin to speed up, with constant acceleration, at time 3.



a. Which car has the largest initial speed?____ The largest final speed?____

b. Which car has the largest acceleration after time 3? How can you tell?

c. Between which two frames do the two cars have the same speed? How can you tell?

d. For car B, make a labeled dot at the approximate position of the car at time 7.5. How does the car's speed at time 7.5 ($v_{7.5}$) relate to the speeds at time 7 (v_7) and at time 8 (v_8)?

7. Each diagram shows arrows representing the velocity and acceleration vectors for an object at a certain instant in time. Describe the motion of the object at each instant.