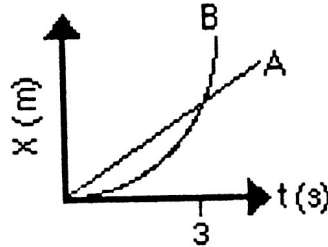# Linear Motion Graphs WS 1

NAME:
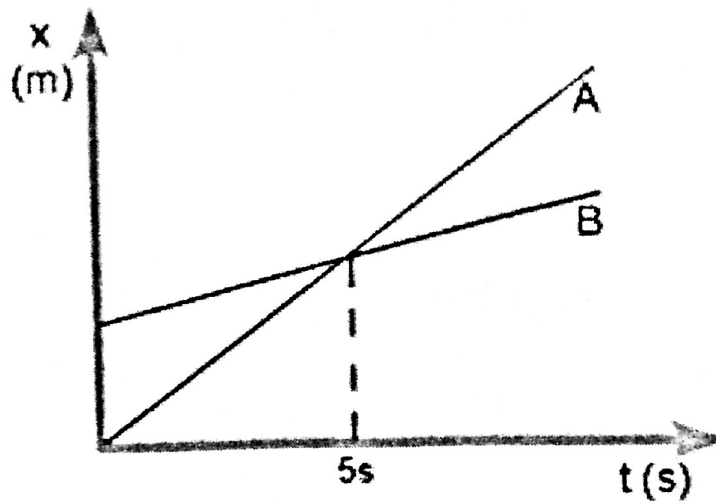
Using the graph below, compare the kinematic behavior of the two objects.

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

a. Displacement at 3 s $A = B$

b. **Average** velocity from 0 - 3 s $A = B$

c. **Instantaneous** velocity at 3 s $B > A$ or $A < B$

Consider the position vs. time graph below for cyclists A and B.

a. Do the cyclists start at the same point? How do you know? If not, which is ahead?

   No— B is ahead

b. At t = 7s, which cyclist is ahead? How do you know?

   A is ahead

c. Which cyclist is travelling faster at t = 3s? How do you know?

   A

d. Are their velocities equal at any time? How do you know? *No*

e. What is happening at the intersection of lines A and B? *A & B are in the same position*
and/or   A passes B

2. Consider the new position vs. time graph below for cyclists A and B.
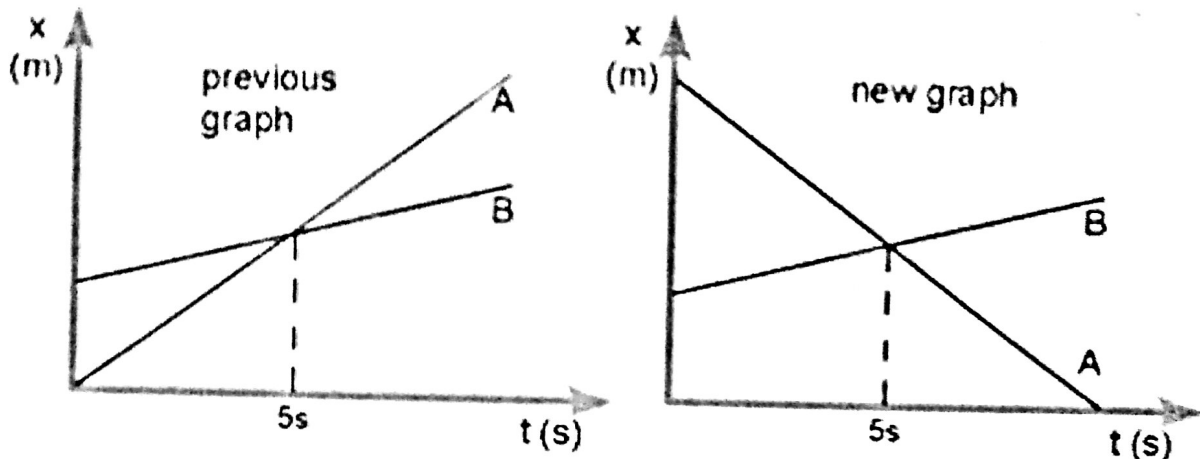
a. How does the motion of the cyclist A in the new graph compare to that of A in the previous graph from page one? *Cyclist A was moving from neg → pos x, (right) now he/she is moving toward the neg (moving left)*
and/or A is moving in the opposite direction

b. How does the motion of cyclist B in the new graph compare to that of B in the previous graph? *no difference*

c. Which cyclist has the greater speed? How do you know? *A*

d. Describe what is happening at the intersection of lines A and B. *A + B meet*

e. Which cyclist traveled a greater distance during the first 5 seconds? How do you know? *A*