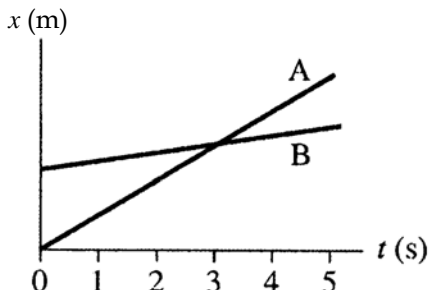


For each question (except multiple choice), your solution must show work/calculations and display/explain your reasoning.

1. The **position vs. time** graphs for two particles A and B traveling in straight lines in the same direction are shown.



a) At $t = 3$ s, which particle has the **larger speed**?

particle A the particles have the same speed

particle B not enough information

b) At $t = 3$ s, which particle has the **larger acceleration**?

particle A the particles have the same acceleration

particle B not enough information

c) Between 0 s and 3 s, which particle **traveled the largest distance**?

particle A the particles traveled the same distance

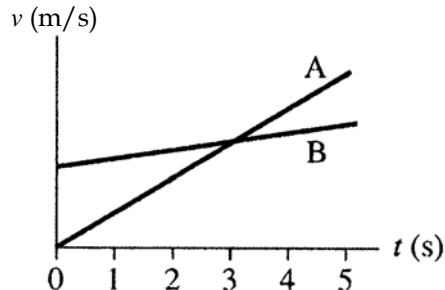
particle B not enough information

d) At $t = 3$ s, which particle is **further ahead**?

particle A the particles are at the same location

particle B not enough information

2. The **velocity vs. time** graphs for two particles A and B traveling in straight lines in the same direction are shown.



a) At $t = 3$ s, which particle has the **larger speed**?

particle A the particles have the same speed

particle B not enough information

b) At $t = 3$ s, which particle has the **larger acceleration**?

particle A the particles have the same acceleration

particle B not enough information

c) Between 0 s and 3 s, which particle **traveled the largest distance**?

particle A the particles traveled the same distance

particle B not enough information

d) At $t = 3$ s, which particle is **further ahead**?

particle A the particles are at the same location

particle B not enough information

3. You can choose between two different shops to get custom tee-shirts for your event. Tees-R-Us charges a base fee of \$20 plus \$5 per shirt. Smar-Tees charges a base fee of \$60 plus \$3 per shirt. Your problem is to determine how many tee-shirts you would need to order for Smar-Tees to be the preferable shop.

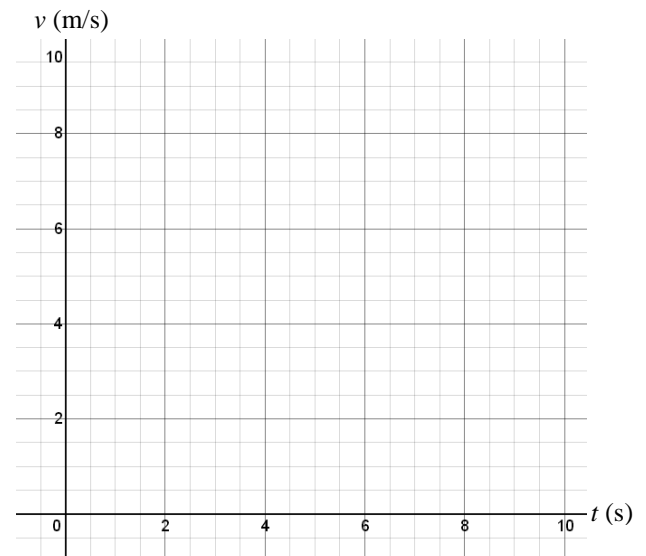
a) Write down an equation or equations that would let you solve the problem.

b) Complete the mathematics to determine how many tee-shirts you would need to order for Smar-Tees to be the preferable shop. Does your answer make sense?

4. An object moving in a straight line with constant acceleration was determined to be moving at 10 m/s at 4 s and at 2 m/s at 8 s.

a) Determine the object's acceleration.

b) Determine the object's displacement between 4 s and 8 s.



c) Assuming the object was always moving with the same constant acceleration, determine its speed at 0 s.