**1) A small cart is sitting at its starting point in the middle of a straight track. If you give the cart a push in the positive direction, what will happen to the cart? Circle all that apply.**

**a**. The speed of the cart will increase.

**b**. The displacement of the cart will decrease.

**c**. The velocity of the cart will increase.

**d**. The displacement of the cart will increase.

**e**. The velocity of the cart will decrease.

**2) Starting from one shore, you swim east across a narrow river to the other shore. The river is 19.0 m wide. As you swim, the river current moves you north up the river a distance of 12.0 m. Draw a diagram representing this situation. What is your resultant displacement? Express your answer in components, and then determine the magnitude.**

**3) A child releases a balloon at a park. The balloon travels up into the air 8.20 m, and east across the park a distance of 23.0 m, before getting stuck in a tree. Draw a diagram representing this situation. What is the resultant displacement of the balloon? Express your answer in components, and then determine the magnitude.**

**4) A bird drops a feather from the roof of a 13.1 m tall building. The feather is blown 48.6 m west before falling to the ground. What is the resultant displacement of the balloon?**

**a.** 7.90 m **b.** 10.6 m **c.** 61.7 m **d.** 50.3 m