

## Math 1B – Writing Project #1

Dear Calculus Students:

I was hoping that you could help me with a problem that's been plaguing my track team. We're all amateurs, and we all suffer from having no depth perception. Normally this is no problem. When you run events on the track, you just go where the track goes and stop when you cross the line – no worries. In fact, we can all run 400 meters in right around 66 seconds. Not bad, right! The sticky part comes when we try to do relays. We're horrible at handoffs!

The thing is, in a track relay, each runner has to hand a baton to the next runner in a short box called the passing zone, which is about 20 meters long. Let's suppose our first runner, Amanda, wants to hand the baton to me. She comes sprinting down the home stretch. If I stand at the beginning of the box and wait for her, she flies by me and it takes me a while to get going. I'm allowed to start running before she gets to the passing zone, but sometimes I start too soon (no depth perception), and then I nearly run out of the end of the box before she gets there, so I have to slow down and wait again. The same dilemma happens when I pass the baton to Carla or when Carla passes the baton to Darlene. It's awfully embarrassing to have such lousy handoffs when we can run so respectably all alone. Darlene flat-out refuses to join the relay any more after one particularly sloppy race a year and a half ago.

But suppose we put a yellow bandana down on the ground at just the right distance before the passing box. Then when Amanda runs past the bandana, she could yell, "Go!" and I could run as hard as I could – I know I can get up to full speed in just 2 seconds if I don't have to worry about Amanda catching up with me – and we'd have a near perfect handoff. Then I could do the same for Carla, and Carla for Darlene.

Do you have any way of figuring out where we put the bandana? If I could get your answer and a way to persuade Darlene that it ought to work, I'd really appreciate it!

Sincerely,

Betty Rawls