

1) On the front of your graph paper, draw the graphs of the how the distance of the three runners changes over time. ( $x$-axis time go by 1 minute up to $35 \mathrm{~min} ; y$-axis distance go by 0.25 mi up to 3.5 mi )

- Miriam starts first and runs at a steady pace of 1 mile every 11 min .
- Kacey starts 5 min after Mirima and runs at a steady pace of 1 mile every 9 min .
- Domonique starts 2 min after Kacey starts and runs at a steady pace of 2 laps ( 0.5 mi ) in 3 min . She maintains this steady pace for the next 2 laps, but then she slows down to a different steady pace of 1 lap ( 0.25 mi ) every 3 min .
a. Who was the first person to run 3 miles? At what time?
b. Who passes whom on the track? At approximately what times? At approximately what distances?

2) On the back of your graph paper, draw the graphs of how the distance of the two cars changes over time as they travel north. ( $x$-axis time go by 1 hour up to 6 hours; $y$-axis go by 25 mi up to 350 mi )

- Car 1 travels at a constant speed of 50 mph for two hours and then speeds up to drive at a constant speed of 100 mph for the next hour. The car breaks down and the driver has to stop and work on it for 2 hours. When the driver gets it running again, he continues driving recklessly at a constant speed of 100 mph .
- Car 2 starts at the same time as Car 1, but 100mi north of Car 1. Car 2 travels at a constant speed of 25 mph throughout the trip.
a. Who passes whom on the road? At approximately what times? At approximately what distances?
b. Pretend you are the safe driver of Car 2. Describe the story of your trip, including what you see the reckless driver of Car 1 doing at different times.

