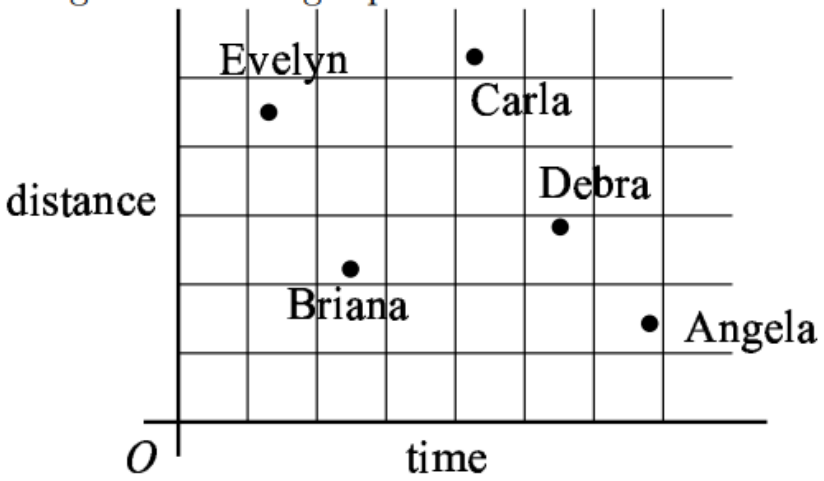
2005 Q17

17. The results of a cross-country team's training run are graphed below. Which student has the greatest average speed?



(A) Angela **(B)** Briana **(C)** Carla **(D)** Debra **(E)** Evelyn

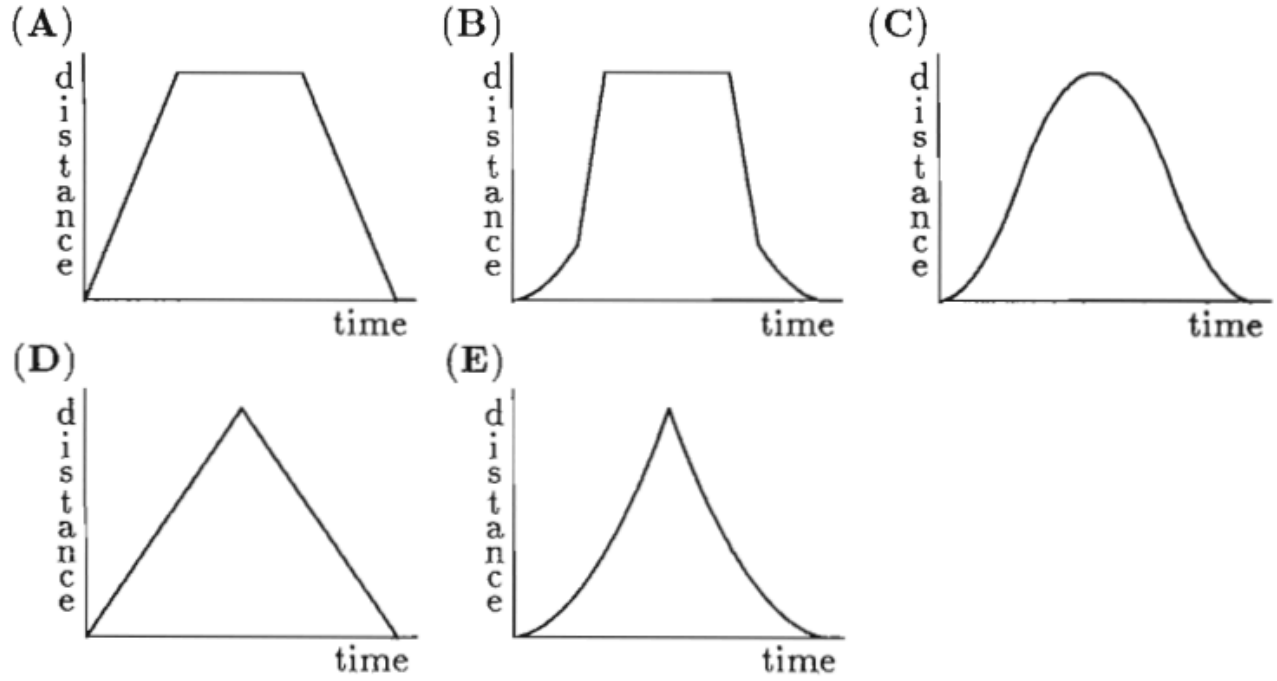
17. **(E)** Evelyn covered more distance in less time than Briana, Debra and Angela, so her average speed is greater than any of their average speeds. Evelyn went almost as far as Carla in less than half the time that it took Carla, so Evelyn's average speed is also greater than Carla's.

OR

The ratio of distance to time, or average speed, is indicated by the slope of the line from the origin to each runner's point in the graph. Therefore, the line from the origin with the greatest slope will correspond to the runner with the greatest average speed. Because Evelyn's line has the greatest slope, she has the greatest average speed.

1994 Q18

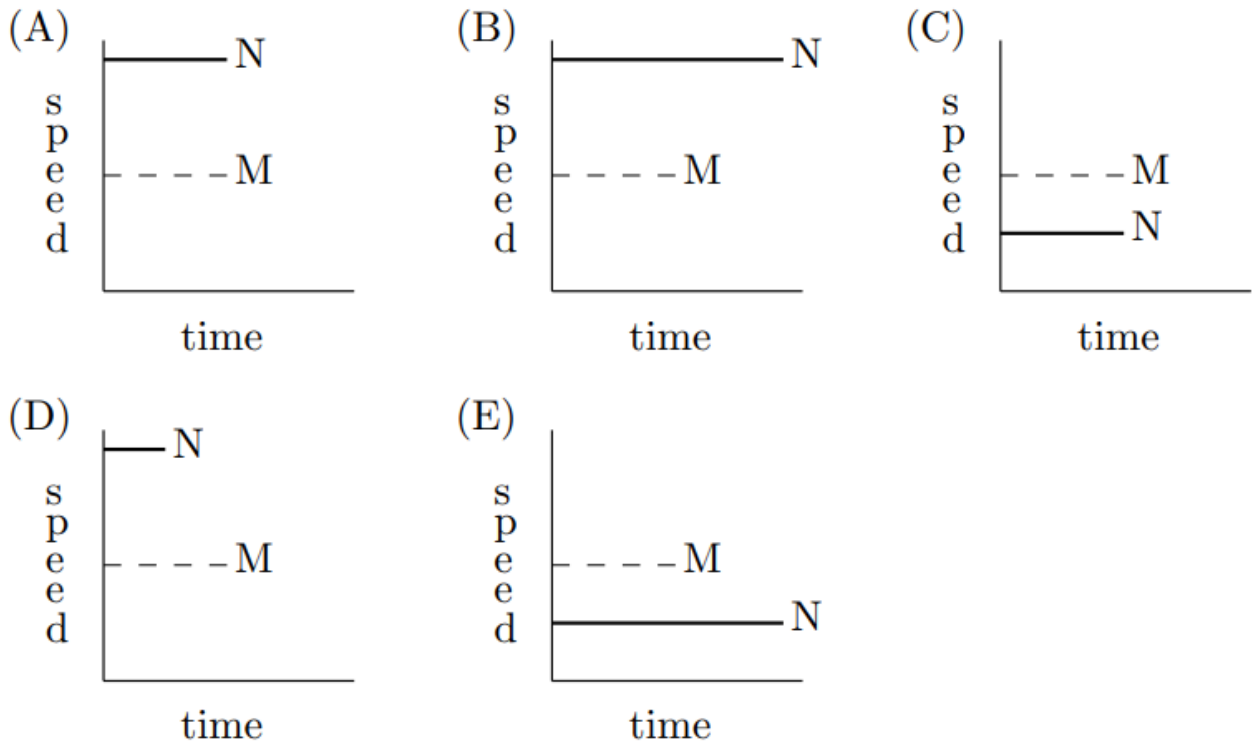
18. Mike leaves home and drives slowly east through city traffic. When he reaches the highway he drives east more rapidly until he reaches the shopping mall where he stops. He shops at the mall for an hour. Mike returns home by the same route as he came, driving west rapidly along the highway and then slowly through city traffic. Each graph shows the distance from home on the vertical axis versus the time elapsed since leaving home on the horizontal axis. Which graph is the best representation of Mike's trip?



18. **(B)** Both graphs **(A)** and **(B)** show a flat segment indicating no change in distance, or a stop. Graph **(A)** shows a constant change in distance indicating a constant rate of driving before and after the stop. Graph **(B)** shows a slow change in distance (shallow graph) followed by a more rapid change in distance (steep graph) indicating a slower rate followed by a faster rate of driving before the stop. After the stop, it shows a faster rate of driving followed by a slower rate. Thus, graph **(B)** corresponds to Mike's trip.

2001 Q19

19. Car M traveled at a constant speed for a given time. This is shown by the dashed line. Car N traveled at twice the speed for the same distance. If Car N's speed and time are shown as solid line, which graph illustrates this?



19. (D) The second car travels the same distance at twice the speed; therefore, it needs half the time required for the first car. Graph D shows this relationship.