If you drive 75 miles at a speed of 70 miles per hour, and then return along the same route at a more leisurely speed of 50 miles per hour, what is your average speed for the round trip?

- We will use the formula: \( distance = rate \times time, \ d = r \times t \)

- The total distance traveled is 150 miles.

- Since \( t = \frac{d}{r} \), the time it takes to complete the first 75 miles is \( t_1 = \frac{75}{70} = 1.07 \) hours.

- Since \( t = \frac{d}{r} \), the time it takes to complete the next 75 miles is \( t_2 = \frac{75}{50} = 1.50 \) hours.

- The total time for the round trip is \( t_1 + t_2 = 1.07 + 1.50 = 2.57 \) hours.

- Since \( r = \frac{d}{t} \), the average speed for the round trip is \( r = \frac{150}{2.57} = 58.4 \text{ mph} \).

Note: The average speed is not the average of 50 mph and 70 mph which is 60 mph!