

A 40 mile-long army is marching at a constant speed through the desert. A horseman at the back of the army rides at a constant speed towards the front bearing a message for the general who is at the head of the army. When the horseman arrives at the front of the army, he immediately delivers the message and reverses direction, riding back towards the rear (still at a constant speed). By the time he arrives at the back of the army, the army has marched 40 miles. How far did the horseman ride?

i.e. If the horseman had an odometer on the horse, how many miles would it say ? (Hint : It is NOT 80 or 120 miles)