



Motorcycle Trip to Sturgis: Graphing Time and Distance

Trip Overview

On August 4th, you loaded up your gear and jumped on your motorcycle excited to join your peers at the Sturgis Bike Rally. After strapping on your helmet, you revved up your engine and headed out of town at 9:00 am. At 9:50 am, after driving 52 miles, you pulled into the Flying J gas station just north of Sioux Falls to fill gas and clean the bugs off your helmet. At 10:05 am, you jumped back on your motorcycle and headed west on I-90. You drove another 138 miles, it was Noon and your stomach was growling. You stopped at Al's Oasis just west of Chamberlain for a bite to eat and to fill your motorcycle tank up with gas, taking one hour for the stop. After traveling the next 150 miles, your next stop at 3:10 pm was Wall Drug. In Wall Drug you spent one hour sluing for gold and filled up gas again. Finally you drove the last 80 miles and arrived in Sturgis at 5:30 pm.

- Define
 - distance
 - displacement
 - average speed.
 - velocity
- Calculate the speed of each leg of your journey (do not include the stops) in mph. Show your work and label.
 - Brookings to Sioux Falls
 - Sioux Falls to Chamberlain
 - Chamberlain to Wall Drug
 - Wall Drug to Sturgis
- For which leg, town to town, of your journey was the speed the greatest? _____
- For which leg of your journey was the speed the slowest? _____
- Calculate the average speed of the entire trip (do not include the stops). Show your work and label.
- Give the velocity for the part of your trip from Al's Oasis west of Chamberlain to Sturgis.
- Obeying the speed limit just outside of Mitchell, you slowed down from 75 mph to 65 mph in 2 minutes. Calculate your rate of acceleration.
- Graph the trip. (time on the x-axis and distance on the y-axis)
- On your graph, label the following: Brookings, Sioux Falls, Chamberlain, Wall Drug, and Sturgis.
- What do you notice on your graph about the stops?



