The Curiosity Rover on Mars landed at Bradbury Station on Day 0 (Called Sol 0) and is headed for an important geological site called Glenelg. This map shows the location of the Rover until Sol 29. Also shown on the map is a coordinate grid marked in intervals of 50-meters. Bradbury Station is located at approximately (+100, +230). The table below gives the location of Curiosity for the period from Sol 29 to Sol 56. Students should use the distance formula to determine interval lengths: $d^2 = (x2-x1)^2 + (y2-y1)^2$ but they may also use millimeter rulers and the image scale to determine the distances between the points.

Day	X	Y	Day	X	Y
39	+210	+180	48	+360	+175
41	+270	+210	49	+390	+180
42	+300	+200	52	+470	+200
45	+315	+165	56	+500	+205

Problem 1 – Graph the additional points and connect them with line segments to show Curiosity's path across the martian landscape.

Problem 2 – During which segment was Curiosity traveling the fastest?

Problem 3 – During which segment was Curiosity traveling the slowest?

Problem 4 – What has been the average speed of Curiosity between Sol 39 and Sol 56?
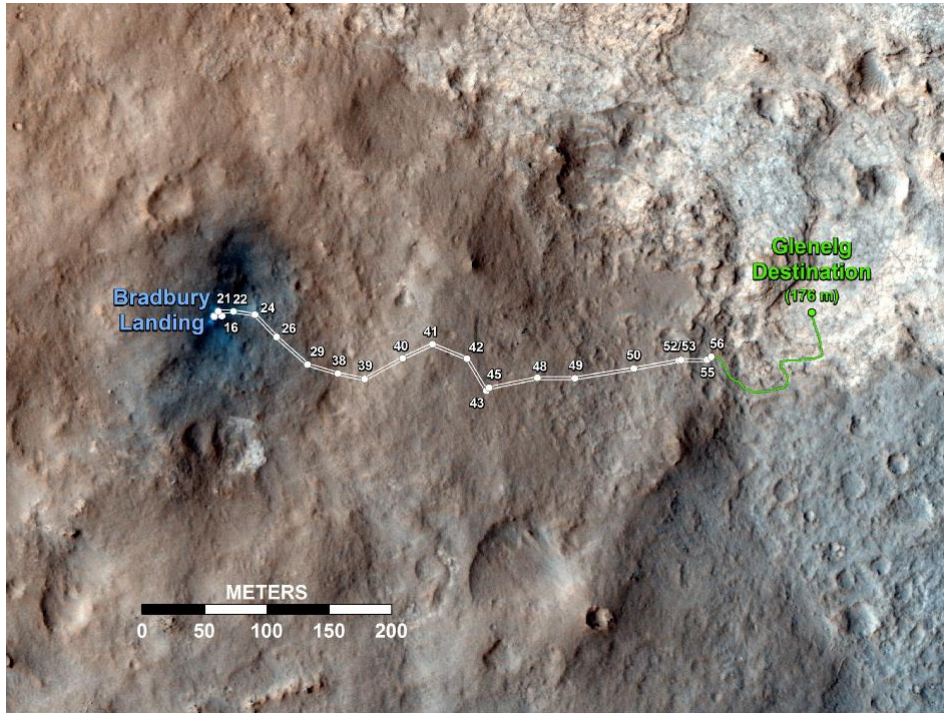
Problem 1 – Graph the additional points and connect them with line segments to show Curiosity's path across the martian landscape. Answer: **See actual course above**.

Day	X	Y	Segment Time (days)	Segment Distance (m)	Segment Speed (m/d)
39	+210	+180			
41	+270	+210	2	67	34
42	+300	+200	1	32	32
45	+315	+165	3	38	13
48	+360	+175	3	46	15
49	+390	+180	1	30	30
52	+470	+200	3	82	27
56	+500	+205	4	30	8

Example: Day 45 - Day 42 = 3 days. $D^2 = (315-300)^2 + (165-200)^2 = 1450$ so d = 38 meters and speed = 38meters/3days = 13 meters/day.

Problem 2 – During which segment was Curiosity traveling the fastest?   **Between Sol 41 and Sol 42 at a speed of 34 meters per day.**

Problem 3 – During which segment was Curiosity traveling the slowest? **Between Sol 52 and Sol 56.**

Problem 4 – What has been the average speed of Curiosity between Sol 39 and Sol 56?
Total segment distance traveled = (67+32+38+46+30+82+30)=325 meters in 17 days
So **average speed = 19 meters/day.**