Intellectual Need Task for Riemann Sums (Notation)

The Opportunity rover landed on Mars in 2004 and has been actively exploring the planet ever since. It is powered by solar cells. As the rover travels across the Martian surface, it kicks up dust, which accumulates on its solar cells. The amount of dust that it kicks up depended on the composition of the surface it was traveling over - a rockier surface kicks up less dust than a softer surface. When planning a path for the rover to follow, scientists need to know how far it might travel before too much dust accumulates on its solar panels.

The scientists have mapped out a 100-km path for the rover to follow and have collected satellite data about the composition of the Martian surface at various points along the route using a LiDAR Spectrometer.

Find left *and* right Riemann sums for dust accumulation. Report answers using *sigma notation*.

Composition	Position along path (km)	Amount of dust per distance traveled (mg/km)
Very sandy	0	6
Moderately sandy	20	3.5
Slightly sandy	40	2.5
Slightly rocky	60	2
Moderately rocky	80	1.5
Very rocky	100	1