Andy the Geologist was out in the desert doing some research. After a while, he got thirsty, so he wanted to go to the gas station for some water. In his Jeep he can only drive 20 MPH in the sand, and 45 on the road.

Road

Gas Station

12 miles

20 miles

Desert

Andy

* Can you think of more than one way that Andy can go to the gas station?
* What questions do you have about this situation?
* What do you think is Andy’s main question?

Classes:

Geometry

* Use of Pythag.
* Or use of trig.

Alg 2/PreCalc/Calc

* Use of extrema
* Use of graphing calc
* Use of derivatives
* Domain/range

Teacher Notes:

Student Arrangement: I would suggest doing this in a group. I would allow students to think about the first 3 questions on their own for perhaps 5 minutes or more, and then have them share their ideas with their group. During the share-out, I would be scanning in order to select student responses to share as a class.

Potential Sequencing:

During selection of students, I would select students with errors (although I would not say they had errors). Students in the class hopefully will help spot the errors, although I will make sure that I praise both students and make sure the class understands the value of the shared responses.

* Errors might be in using just the speed or distance, and not the time for each route.
* Next steps will depend on the class…
* Geometry:
  + Launch to Pythag. Perhaps or a launch to Trig. (find the angle which he would need for his bearing)
* Algebra 2 or PreCalc
  + Is there a faster route than just the 2?
  + How can you find the fastest routes? (launch into extrema and/or use of calculators) (Could also be a great domain and range discussion)