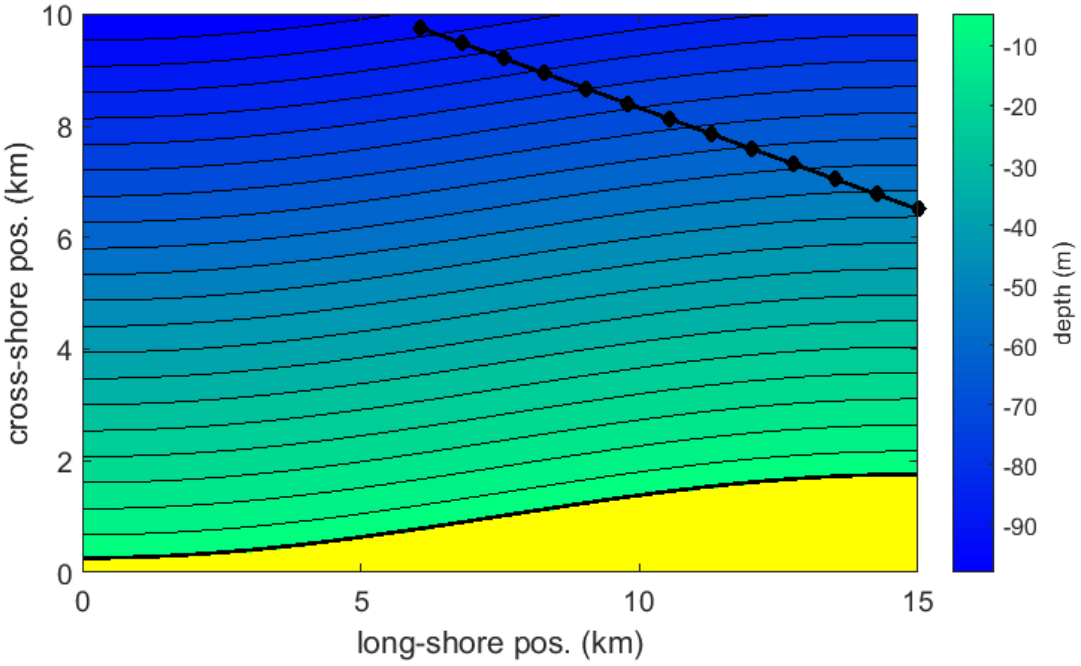
GLY 4734/6932 - Coastal Morphology and Processes
Wave Refraction

November 11, 2020

Names: _____ Group: _____

1. On the diagram below, draw the propagation of wave rays, starting from the points indicated by black dots and ending at the shoreline. Identify the regions of shoreline with the **highest** and **lowest** energy flux per shoreline length.



2. Explain what causes the wave ray pattern you drew on the diagram above.

3. As a wave propagates into shallower water,

   (a) How does the orientation of wave rays change as a wave propagates into shallower water?

   (b) How does the orientation of wave crests change as a wave propagates into shallower water?

   (c) What do these patterns signify for the spatial distribution of wave energy flux?

4. Describe the effects of each of the following on spatial patterns of wave energy flux:

   (a) Coastline shape

   (b) Wave angle of approach

   (c) Wave period

5. Describe the impact of bathymetric features, such as shoals or borrow pits, on the distribution of wave energy flux in the coastal zone.