1. Give two examples of functions of more than one variable arising in real-world contexts. What are the independent and dependent variables of each function?

2. Consider the following graph. Sketch the trace in the $y, z$-plane.

3. Explain how the level curves indicate the shape of a graph of a function of two variables.

4. You conduct (if at all) do you think that mathematical models are in your future career? Circle one:
   - not at all useful = 0
   - extremely useful = 4

5. Provide two examples of multivariable functions arising in real-life contexts. What are the independent and dependent variables in each case?

6. The figure below is a map showing curves of the same elevation of a region in Dangriga National Park. We define the altitude function $A(x, y)$ as the altitude at a point $x$ meters east and $y$ meters north of the origin (“Start”).
   a) Estimate $A_x(300, 300)$ and $A_y(300, 300)$.
   b) What do $A_x$ and $A_y$ represent in physical terms?

7. How useful (if at all) do you think reasoning with limits and partial derivatives will be in your future career? Circle one:
   - not at all useful = 0
   - extremely useful = 4