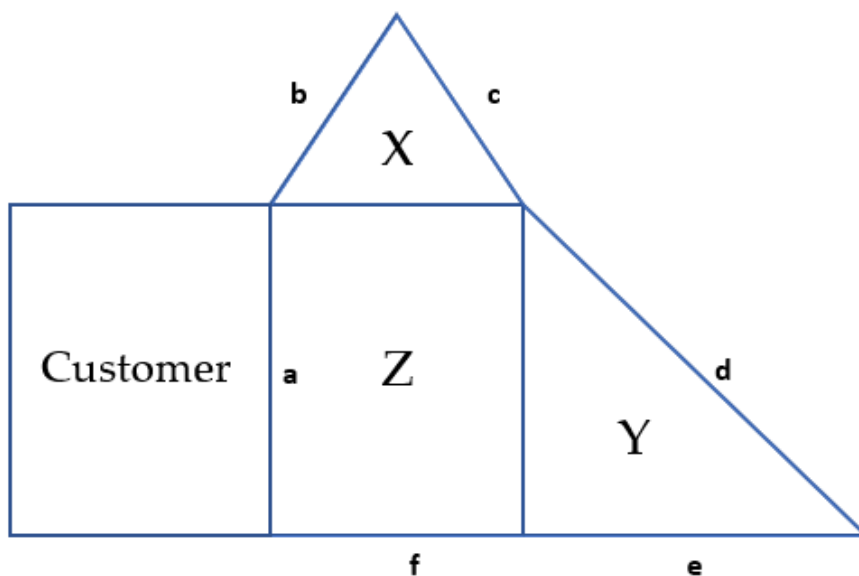


**QUESTIONS**

When One Energy considers installing wind turbines for a customer, many factors are taken into account. The most important factor is the wind speed at the location. Another factor is topography, which is important because wind flows differently across varying elevations and slopes. Yet another factor considers the presence of wetlands or critical habitats, either of which would affect where a turbine could be installed. The list goes on. Before One Energy starts delving into all these different factors, however, one very simple thing needs to be determined... how much land is available!

**Level 1:** A customer purchased land adjacent to their industrial facility on which they would like One Energy to install wind turbines. The land is made up of three separate parcels (X, Y, and Z). Determine the dimensions of each land parcel purchased by the customer if the length (a) of parcel Z is 2 kilometers long, the width (e) of parcel Y is 2.5 kilometers, the distance from the bottom of parcel Z to the tip of parcel X is 3 kilometers, and the distance across the bottom of parcels Y and Z is 4 kilometers. Assume parcel X is an isosceles triangle. Use the figure below for reference.



**Level 2:** Now that the dimensions of the land parcel have been solved, the land available can be determined. Find the total area of the purchased parcels in acres.