Google Earth Ski Slopes

Ski slopes are marked by level of difficulty. One of the methods to determine this level is by finding the degree of elevation. This value tells us the slope of the ski run in degrees: The higher the degree value, the steeper the slope, the more difficult the run.

Students will use Google Earth to obtain satellite images for a variety of ski slopes in the Pacific North West. Once a ski resort has been selected, students must then find the angle of elevation for two ski runs using right triangles, topographical measurements, an interactive ruler and trig functions. Students will take a screen shot of the satellite image, type their findings (with pictures attached) on a Word document and use correct arithmetic to solve the angle of elevation.

Project Criteria:

- *Describe the project in sufficient detail*
- *Obtain a satellite image using Google earth of a ski resort*
- *Use the web based ruler function to find all measurements*
- *Use the "hand" function to find all elevations*
- *Using the iSight camera, take a picture of your arithmetic then place the jpeg on your Word document*

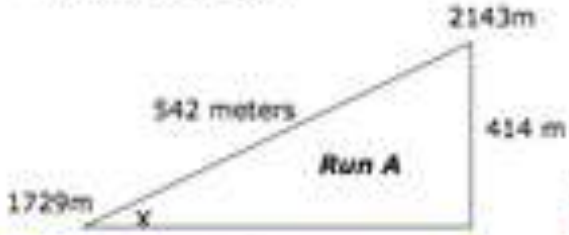
Google Earth Math Project

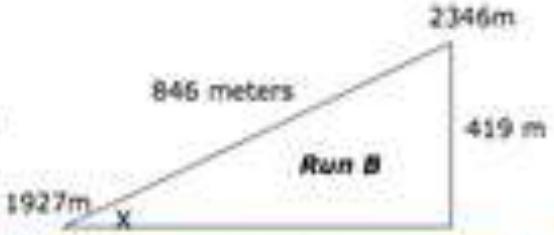
By: McKenna and Tyler

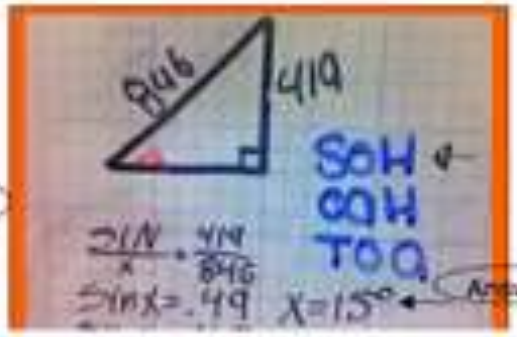
Ski slopes are marked by level of difficulty. One of the ways they determine this level is by finding the degree of elevation. This amount tells us the slope of the ski run in degrees. The higher the degree the greater chance you will break yourself.

The satellite image is from Snow King Ski Run located in Wyoming. The two runs are labeled Run A and Run B. By using Google Earth, we can find the elevation in Meters from the bottom of the run to the top. We then can form two right triangles and find the angle of elevation using trig functions.

Again, the greater the degree of depression, the greater the chance you will die! Here are the measurements for the two runs at Snow King Ski Run and how we solved each.







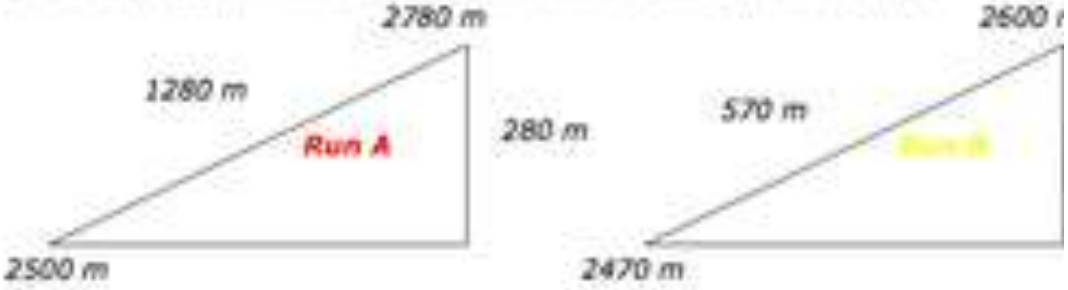
Google Earth Math Project

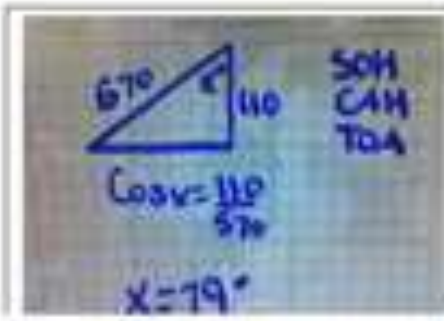
By: Samantha and Spacey Casey

Brighton/Solitude, UT

Ski slopes are named by level of difficulty. The higher the angle of depression, the flatter the angle, and the easier the slope. The very easy slopes are called bunny slopes, then the intermediate slopes, then the more difficult ones called black diamonds, the double black diamonds.

The following satellite image is of the Brighton/Solitude Mountain Range. The two runs were used are color-coded as red (Run A) and yellow (Run B). The satellite image is from Google Earth. We found the altitude of the top and bottom of the run, then the height of the slope. After that, we found the length of the slope. Here's how, using that information, we found the angle of depression which gives us a hint of the difficulty of the slope.





Google Earth Math Project

By: Steve And Chris

Ski slopes are marked by level of difficulty. One of the ways they determine this level is by finding the degree of depression. This amount tells us the slope of the ski run in degrees. The higher the degree the more difficult the run.

The following satellite image is from Snowbowl located in Arizona. The two main runs are labeled Run A and Run B. By using Google Earth, we can find the elevation in feet from the top of the run to the bottom. We then can form right triangles and find the angle of depression. Again, the greater the degree of depression, the more difficult the ski run.

Here are the measurements for the following two runs at Snowbowl and how we solved each using trig functions.