

For this assignment you will define five functions and then call each one.

1. Write a compare function that returns 1 if  $x > y$ , 0 if  $x == y$ , and -1 if  $x < y$ . (10 points)
2. Write a function called **hypotenuse** that returns the length of the hypotenuse of a right triangle given the lengths of the two legs as arguments. (10 points)
3. Write a function that asks a student to enter the percentage scored on the python course and based on the grading of the course return the grade. For the grades below 81 return a message that says "You did not do very well in this course!" (10 points)
4. Write a function **slope**(x1, y1, x2, y2) that returns the slope of the line through the points (x1, y1) and (x2, y2). Then use this function in a function called **intercept**(x1, y1, x2, y2) that returns the y-intercept of the line through the points (x1, y1) and (x2, y2). The final result should be the equation of the line that goes through the points. (30 points)
5. Write a program that asks the user to enter the weight of a package in kg and whether to mail it in USA or outside. Calculate and print to the user the cost of shipping the package. For the first 10kg the rate for USA is \$4/kg and outside \$6/kg, and for packages weighting more than 10kg the rate increases by \$2/kg for USA and \$4/kg for outside. Packages that weight more than 20kg are not delivered and a message should be provided to the user. (40 points)

### **Deliverable:**

- **Your Python script (100 points)**