

# Coding Assignment 01

CSCI 220: Dr. Hajja

Due Wednesday, September 6th (midnight)

**Write each program in a separate file (question01.py, question02.py, question03.py, and question04.py). Upload the files through Oaks.**

---

**Question 1)** Write a Python program (in question01.py) to calculate the area of a triangle given the length of its three sides  $a$ ,  $b$ , and  $c$ , using these formulas:

$$s = \frac{a + b + c}{2}$$

$$\text{area} = \sqrt{s(s - a)(s - b)(s - c)}$$

You should write code to prompt the user for each side of the triangle, then print the area according to the formulas above. To get the square root of a value, you can use the power operator (\*\*). For example, to get the square root of 25, you can type `25 **.5`

---

**Question 2)** Write a Python program (in question02.py) that accepts two points using the coordinates  $x$  and  $y$ , and determine the distance between the two points.

$$\text{distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

You should write code to prompt the user for the two points ( $x$  and  $y$  for each point), then print the Euclidean distance according to the formula above.

---

**Question 3)** Write a Python function (in question03.py) that calculates (and prints) the volume and surface area of a sphere from its radius, given as input. Here are some formulas that might be useful:

$$\text{volume} = 4/3\pi r^3$$

$$\text{surface area} = 4\pi r^2$$

---

**Question 4)** Write a Python function (in question04.py) that calculates (and prints) the average of three exam scores provided by the user.