Function Name: `myFirstFunc`

Inputs:

1. (*double*) Length of the base of the triangle
2. (*double*) Length of the height of the triangle

Outputs:

1. (*double*) Area of the triangle

Topics: (*multiplication*), (*division*)

Function Description:

Given the sides of two triangles, find the area of the triangle using the formula:

$$Area = \frac{1}{2}(Base)(Height)$$

Then round your answer to 2 decimal places using the `round()` function.

Example:

```
base = 3
height = 5
area = myFirstFunc(base,height)

area → 7.50
```

Hints:

- The `round()` function may be useful.
  - Type `help round` in the command window if you need more specifics on `round()`

Function Name: `illuminatiFlux`

Inputs:

1. (*double*) Distance from the wires to the center

Outputs:

1. (*double*) The magnetic field strength at the center of the triangle

Topics: (*multiplication*), (*division*)

Function Description:

You have three wires each carrying a current in such a way that they form an equilateral triangle. The strength of the magnetic field, B (your output), at distance r (your input) from your three wires is given by:

$$B = \frac{3\mu_0 I}{2\pi r}$$

Where $\mu_0 = 4\pi \bullet 10^{-7}$ and $I = 3$. Calculate the magnetic field strength at the center of the triangle. Finally, round your answer to 2 decimal places.

Example:

```
dist = 5;
magStr = illuminatiFlux(dist);

magStr → 3.60e-7
```

Notes:

- Type `pi` into the command window and see what it gives you!
- All inputs will be positive integers.

Function Name: `pythag`

Inputs:

1. (*double*) The length of one leg of your right triangle
2. (*double)* The length of the triangle's hypotenuse

Outputs:

1. (*double*) The length of the missing leg of your triangle

Function Description:

You are given a right triangle with the length of one of the legs and the length of the hypotenuse. Using the pythagorean theorem:

$$a^2 + b^2 = c^2$$

Solve to find the length of the missing leg of your triangle. Round your final answer to three decimal points.

Example:

```
a = 8;
c = 25;

b = pythag(a,c);
b → 23.685
```

Notes:

- All inputs will be positive integers.
- The hypotenuse (2nd input) will always have a greater value than the leg (1st input).

Hints:

- Try solving on paper first to algebraically isolate b, then code!
- The `sqrt()` function may be useful for solving square roots.

Function Name: `heronsFormula`

Inputs:

1. *(double)* Side length a of a triangle
2. *(double)* Side length b of a triangle
3. *(double)* Side length c of a triangle

Outputs:

1. (*double*) Half of the triangle's perimeter
2. (*double*) Area of the triangle

Function Description:

You are given three side lengths of a triangle (a,b,c). Using Heron's Formula:

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

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

For your first output, return `s` (half of the perimeter). For your second output, return the area of the triangle rounded to 2 decimal places.

Example:

```
sideA = 5;
sideB = 5;
sideC = 5;

[s, area] = heronsFormula(sideA, sideB sideC);

s → 7.5
area → 10.83
```

Notes:

- Do not round the first output (half of the perimeter)
- Do round the second output (the area)

Function Name: `cosineCalculator`

Inputs:

1. (*double*) Length of side a of triangle
2. (*double*) Length of side b of triangle
3. (*double*) Length of side c of triangle

Outputs:

1. (*double*) Value of the angle, in degrees, that is opposite to side C

Function Description:

In trigonometry, the law of cosines relates the lengths of the sides of a triangle to the cosine of one of its angles. The formula is given by:

$$c^2 = a^2 + b^2 - 2ab\ cos(\theta)$$

where variables `a`, `b`, and `c` represent the side lengths of a triangle, and θ represents the angle opposite side C. Determine the value of the angle across from `c`. Round your output to two decimal places.

Example:

```
a = 25;
b = 28;
c = 27;

angle = cosineCalculator(a,b,c)
angle → 60.94
```

Notes:

- You must rearrange the given equation to solve for the angle in terms of side lengths.
- Ensure your output is in degrees

Hints:

- The `acosd()` function may be useful.