Objectives: In this assignment, you familiarize yourself with `print` and `println` method. Remember that I expect you to follow programming style to make your code readable.

1. **(25 points)** Write a program to display the output similar to image below:

```
***********
*          *
*      HELLO *
*          *
***********
```

2. **(25 points)** Look at the image below. Assume that the radius’s length of the circle equals ½ length of a side of the square. Write a program to ask the user to enter side length of the square, then calculate and display the total area of the parts which are filled yellow color in image.

Example1:
Please enter side length of the square: 9
The area of yellow parts is: 17.415

Example2:
Please enter side length of the square: 5.8
The area of yellow parts is: 7.2326

3. **(20 points)** Trigonometry

To compute the *sine* of a double precision value use this method:

```
Math.sin( value )
```

The *value* is in radians (not degrees.) The *cosine* is computed using

```
Math.cos( value )
```
Again, \textit{value} is in radians. Write a program that:

1. Computes the sine of 0.5236 radians and saves it in a variable.
2. Computes the cosine of 0.5236 radians and saves it in another variable.
3. Computes the square of each those two values (use the variables), adds the two squares, and saves the result (in a third variable.)
4. Writes out the three variables.

The output statement should be something like:

\begin{verbatim}
System.out.println("sine: " + sinx + " cosine: " + cosx + " sum: " + sum);
\end{verbatim}

Try a few other values besides 0.5236.

4. \textbf{(30 points)} Write a program that reads from keyboard the name, weight and the height of a person and then calculate his/her Body Mass Index (BMI) using the following formula:

\[ BMI = \frac{weight}{height^2} \]

Where weight (in kilogram) and height (in meter) are real numbers representing the weight and the height of a person. The result should be rounded with two decimal places.

Then your program shows a message dialog to display the name in upper case letters and his/her BMI index. Note that in this exercise, your program must show Input Dialog to get the user’s input data and use Message dialog to show the BMI Index.

Example:
Note: You can discuss the assignment with your friends but you have to complete by yourself. Copying other’s work is not permitted and you will get 0 point for any part you copied from your friends.