Pop Quiz 1: variables and constants

Introduction to programming in C++ (CSC 100) SP 24

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Write a C program that:

1. declares π as a permanent constant with the value 3.14159.

```
const float PI=3.14159f; // define permanent constant float
```

2. computes the circumference of a circle with radius 10.

```
float circumference, radius; // declare float variables
radius = 10.f;  // assign value to radius
circumference = 2 * PI * radius; // compute circumference
```

3. prints the input and output values (including the constant value of π) on a line each with 5 digits after the decimal point.

```
printf("Pi: %.5f\n", PI);
printf("Radius: %.5f\n", radius);
printf("Circumference: %.5f\n", circumference);
```

4. When you've written the code by hand, open Emacs, open a new Org-mode file, enter and run your code to check if it is correct. Remember that, in Org-mode, you can run one line at a time!

```
#include <stdio.h>
const float PI=3.14159f; // define permanent constant float

int main()
{
  // declare variables
  float circumference, radius;

  // assign value to radius
  radius = 10.f;

  // compute circumference
  circumference = 2 * PI * radius; // compute circumference

  // print results - precision p=5
  printf("Pi: %.5f\n", PI);
  printf("Radius: %.5f\n", radius);
  printf("Circumference: %.5f\n", circumference);

  return 0;
}
```

```
Pi: 3.14159
Radius: 10.00000
Circumference: 62.83180
```