CalculatePi.java

Directions: Calculate approximations of *pi*.

- Pseudocode is required for this program and will be guided in class.
- Declare and initialize variables, keeping ideal data type in mind.
- Format output of a decimal, using two different formatting methods (printf and one of Format's methods).
- Skip lines and use indentation to make your program easy to read.
- This is a one-class, one-method program (use *main).* (Writer-defined methods and classes)
- There are many ways to calculate *pi*; please use both of those below, paying attention to order of operations and casting so you can get a reasonable approximation of *pi*.
- Make sure the output shows each approximation two ways: as a decimal showing 2 places, and a decimal showing 6 places, then tells how different the calculated form is from the value you stated in the first line of output (subtract the two values).
- Use variables to calculate and print; only the numbers 22, 7, 4, 100, 8, 62000, 200000, and 3.141592 should be used in your program.
- Check your work against the example below. This is a rare opportunity to have example given match your program's output exactly.

If you finish early (bonus work, but not extra credit), you are welcome to use a third approximation method. Wikipedia has a lot of options. Try to use one that does not have exponents, trigonometry, or square root signs, as this will require some knowledge of things not yet taught in class (but soon to come!).

Ways to approximate *pi*:

22 / 7

(4 + 100) × 8 + 62000, all divided by 20000

Example of output. Remember, this is not a creative writing class. All decimals are variables rounded the number of places stated in the prompt as well as shown in the sample output below.

I am approximating pi (a bit more than 3.141592).

The calculation 22/7 yields 3.14 or more specifically 3.142857 shown to 6 places. It is -0.001265 different from 3.141592.

The calculation (4+100) x 8 + 62000 all divided by 20000 yields 3.14 or more specifically 3.141600 shown to 6 places. It is -0.000008 different from 3.141592.