

HW2 - Variables, Math, Output

50 points

Homework Description

Write a Python program, which solves the problems from the book: 2.3, 2.4, 2.5, 2.6, 2.7, 2.8 (Chapter 2, page 71).

Problems 2.3, 2.4, 2.5 and 2.6 are worth 7.5 points each.

Problems 2.7 and 2.8 are worth 10 points each.

For each problem, write a comment just before the code specifying the problem number i.e.

```
# 2.3
```

```
if grade >= 90:
```

Grading rubric

For full credit:

Complete the problem successfully, with good coding style and comments.

Ways to lose points:

-3 on each problem, if not completed, but attempted.

-1 on each problem, if bad style and/or comments.

Submission

On Cloud9: Create a folder "hw2". Create one file "hw2.py" in folder "hw2". Put all your code, for all problems in hw2.py, with good comments indicating which code solves which problem.

On Canvas: Submit your AWS Console Login url, and your Cloud9 IDE url. Spencer will click on your first url, then login. Then he'll click on your second url and it should take him straight to your IDE where he can view and run your code.

Problems

The problems come from the book, I have also copy/pasted them below as images (I couldn't copy/paste the text, redshelf wouldn't let me).

2.3 (FILL IN THE MISSING CODE) Replace `***` in the following code with a statement that will print a message like

`'Congratulations! Your grade of 91 earns you an A in this course'`. Your statement should print the value stored in the variable `grade`:

```
if grade >= 90:  
    ***
```

2.4 (ARITHMETIC) For each of the arithmetic operators `+`, `-`, `*`, `/`, `//` and `**`, display the value of an expression with `27.5` as the left operand and `2` as the right operand.

2.5 (CIRCLE AREA, DIAMETER AND CIRCUMFERENCE) For a circle of radius 2, display the diameter, circumference and area. Use the value 3.14159 for π . Use the following formulas (r is the radius): $diameter = 2r$, $circumference = 2\pi r$ and $area = \pi r^2$. [In a later chapter, we'll introduce Python's `math` module which contains a higher-precision representation of π .]

2.6 (ODD OR EVEN) Use `if` statements to determine whether an integer is odd or even. [*Hint:* Use the remainder operator. An even number is a multiple of 2. Any multiple of 2 leaves a remainder of 0 when divided by 2.]

2.7 (MULTIPLES) Use `if` statements to determine whether 1024 is a multiple of 4 and whether 2 is a multiple of 10. (*Hint:* Use the remainder operator.)

2.8 (TABLE OF SQUARES AND CUBES) Write a script that calculates the squares and cubes of the numbers from 0 to 5. Print the resulting values in table format, as shown below. Use the tab escape sequence to achieve the three-column output.

number	square	cube
0	0	0
1	1	1
2	4	8
3	9	27
4	16	64
5	25	125