

Volume of a Cylinder

OBJECTIVE: Create a program that displays the volume of a cylindrical fuel tank. The formula for the volume of a cylinder is:

$$\pi r^2 h$$

π is 3.14159
r is the radius of the tank
h is the height of the tank

Prompt the user for the height of the tank and the radius of the tank. Output the volume as shown.

```
Enter height of cylindrical fuel tank:
10
Enter radius of cylindrical fuel tank:
5
The volume of a cylindrical fuel tank
with height, 10.0, and radius, 5.0, is: 785.3981633974483
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GRADING: (20 points total)

<u>Points</u>	<u>Objective</u>
1	Empty shell – Program compiles and runs without any errors.
10	User is <i>not</i> prompted for the radius and height, instead, two variables representing the tank's radius and height are initialized with pre-determined values. The volume of the tank is calculated by the program, stored in a variable, and outputted to the screen as shown above.
15	User is prompted for the fuel tank's radius and height. The 2 values are stored into variables and used by the program to calculate the tank's volume. The pow() function is not used. The tank's volume is outputted to the screen as shown above.
20	User is prompted for the fuel tank's radius and height. The 2 values are stored into variables and used by the program to calculate the tank's volume. The pow() function is used. The tank's volume is outputted to the screen as shown above.
25	User is prompted for the fuel tank's radius and height. The 2 values are stored into variables and used by the program to calculate the tank's volume. The pow() function is used. The tank's volume and surface area is outputted to the screen as shown above.