Python Expressions Exercises

1. There are 5280 feet in a mile. Write a Python statement that calculates and prints the number of feet in 23 miles.

2. Write a Python statement that calculates and prints the number of seconds in 10 hours, 35 minutes and 20 seconds.

3. The perimeter of a rectangle is $2w + 2h$, where w and h are the lengths of its sides. Write a Python statement that calculates and prints the length in centimeters of the perimeter of a rectangle with sides of length 10 and 15 centimeters.

4. The area of a rectangle is wh, where w and h are the lengths of its sides. Note that the multiplication operation is not shown explicitly in this formula. This is standard practice in mathematics, but not in programming. Write a Python statement that calculates and prints the area in square centimeters of a rectangle with sides of length 10 and 25 centimeters.

5. The circumference of a circle is $2\pi r$ where r is the radius of the circle. Write a Python statement that calculates and prints the circumference in centimeters of a circle whose radius is 8 centimeters. Assume that the constant $\pi = 3.14$.

6. The area of a circle is πr^2 where r is the radius of the circle. Write a Python statement that calculates and prints the area in square centimeters of a circle whose radius is 8 centimeters. Assume that the constant $\pi = 3.14$.

7. Given p dollars, the future value of this money when compounded yearly at a rate of r percent interest for y years is $p(1 + 0.01ry)$. Write a Python statement that calculates and prints the value of 1000 dollars compounded at 7 percent interest for 10 years.

8. Write a single Python statement that combines the three strings "My name is", "John" and "Smith" (plus a couple of other small strings) into one larger string "My name is John Smith." and prints the result.

9. Write a Python expression that combines the string "John Smith is 40 years old." from the string "John Smith" and the number 40 and then prints the result (Hint: Use the function str to convert the number into a string.)

10. The distance between two points (x_0, y_0) and (x_1, y_1) is

$$\sqrt{(x_0 - x_1)^2 + (y_0 - y_1)^2}$$

Write a Python statement that calculates and prints the distance between the points (2,2) and (5,6).