Functions in Python

```
# 6.2 - Write Your Own Functions
# Solutions to review exercises


# Exercise 1
def cube(num):
    """Return the cube of the input number."""
    cube_num = num**3  # Could also use pow(num, 3)
    return cube_num


print(f"0 cubed is {cube(0)}")
print(f"2 cubed is {cube(2)}")


# Exercise 2
def greet(name):
    """Display a greeting."""
    print(f"Hello {name}!")


greet("Guido")
# 6.3 - Challenge: Convert temperatures
# Solution to challenge


def convert_cel_to_far(temp_cel):
    """Return the Celsius temperature temp_cel converted to Fahrenheit."""
```

Functions in Python

```
    temp_far = temp_cel * (9 / 5) + 32
    return temp_far



def convert_far_to_cel(temp_far):
    """Return the Fahrenheit temperature temp_far converted to Celsius."""
    temp_cel = (temp_far - 32) * (5 / 9)
    return temp_cel



# Prompt the user to input a Fahrenheit temperature.
temp_far = input("Enter a temperature in degrees F: ")

# Convert the temperature to Celsius.
# Note that `temp_far` must be converted to a `float`
# since `input()` returns a string.
temp_cel = convert_far_to_cel(float(temp_far))

# Display the converted temperature
print(f"{temp_far} degrees F = {temp_cel:.2f} degrees C")

# You could also use `round()` instead of the formatting mini-language:
# print(f"{temp_far} degrees F = {round(temp_cel, 2)} degrees C"")

# Prompt the user to input a Celsius temperature.
temp_cel = input("\nEnter a temperature in degrees C: ")

# Convert the temperature to Fahrenheit.
temp_far = convert_cel_to_far(float(temp_cel))
```

Functions in Python

```
# Display the converted temperature
print(f"{temp_cel} degrees C = {temp_far:.2f} degrees F")
# 6.4 - Run in Circles
# Solutions to review exercises



# Exercise 1
# print the integer 2 through 10 using a "for" loop
for i in range(2, 11):
    print(i)



# Exercise 2
# print the integer 2 through 10 using a "while" loop
i = 2
while i < 11:
    print(i)
    i = i + 1



# Exercise 3
def doubles(num):
    """Return the result of multiplying an input number by 2."""
    return num * 2



# Call doubles() to double the number 2 three times
my_num = 2
```

Functions in Python

```
for i in range(0, 3):
    my_num = doubles(my_num)
    print(my_num)
# 6.5 - Challenge: Track Your Investments
# Solution to challenge



# Calculate interest to track the growth of an investment



def invest(amount, rate, years):
    """Display year on year growth of an initial investment"""
    for year in range(1, years + 1):
        amount = amount * (1 + rate)
        print(f"year {year}: ${amount:,.2f}")



amount = float(input("Enter a principal amount: "))
rate = float(input("Enter an anual rate of return: "))
years = int(input("Enter a number of years: "))

invest(amount, rate, years)
```