Temperature Conversion Program

The following Python program requests from the user a temperature in degrees Fahrenheit, and displays the equivalent temperature in degrees Celsius. This program utilizes the following programming features:

➤ arithmetic expressions ➤ operator associativity ➤ format function

Program Execution ...

```
This program will convert degrees Fahrenheit to degrees Celsius
Enter degrees Fahrenheit: 100
100.0 degrees Fahrenheit equals 37.8 degrees Celsius
```

```
1  # Temperature Conversion Program (Fahrenheit to Celsius)
2
3  # This program will convert a temperature entered in Fahrenheit
4  # to the equivalent degrees in Celsius
5
6  # program greeting
7  print('This program will convert degrees Fahrenheit to degrees Celsius')
8
9  #get temperature in Fahrenheit
10 fahren = float(input('Enter degrees Fahrenheit: '))
11
12 # calc degrees Celsius
13 celsius = (fahren - 32) * 5 / 9
14
15 # output degrees Celsius
16 print(fahrenheit, 'degrees Fahrenheit equals',
17       format(celsius, '.1f'), 'degrees Celsius')
```

Notes:

Lines 1–4 contain the program description. Line 7 provides the program greeting. Line 10 reads the Fahrenheit temperature entered, assigned to variable `fahren`. Either an integer or a floating- point value may be entered, since the input is converted to float type. Line 13 performs the calculation for converting Fahrenheit to Celsius. Recall that the division and multiplication operators have the same level of precedence. Since these operators associate left-to-right, the multiplication operator is applied first. Because of the use of the “true” division operator `/`, the result of the expression will have floating-point accuracy. Finally, **lines 16–17** output the converted temperature in degrees Celsius.

Extension

1. Modify the Temperature Conversion program to convert from Celsius to Fahrenheit instead. The formula for the conversion is f = (c * 9/5) + 32.