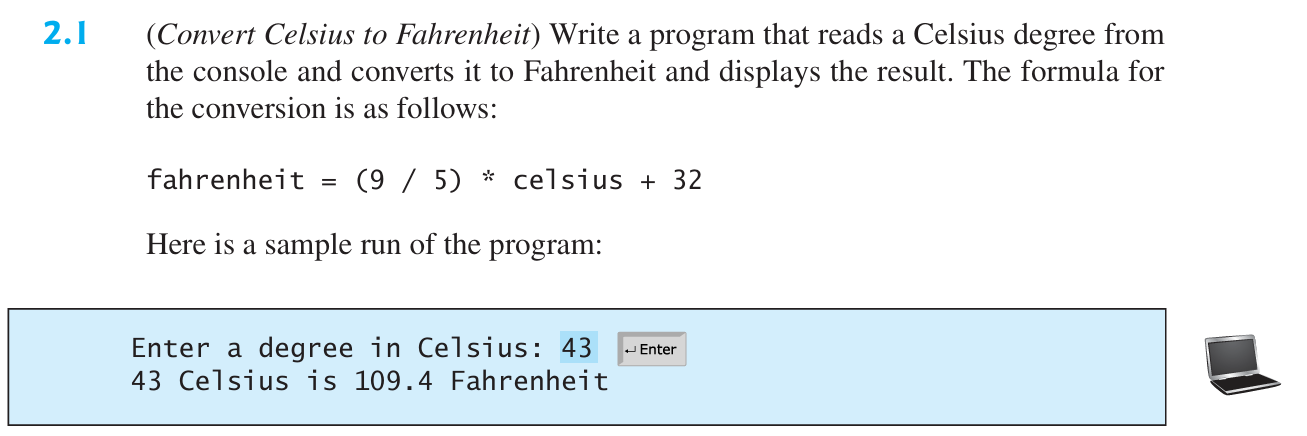
*Date: 16/09/2024*

***Assignment 01***

*Name: MEHRIN FARZANA*

*ID: 2101013*

*Problem no. 1.*



*Solution:*

Code:

cel = int(input("Enter a degree in Celsius: "))

far = round((9 / 5) \* cel + 32, 2)

print(cel, end=" ")

print("Celcius is ", end="")

print(far, end=" ")

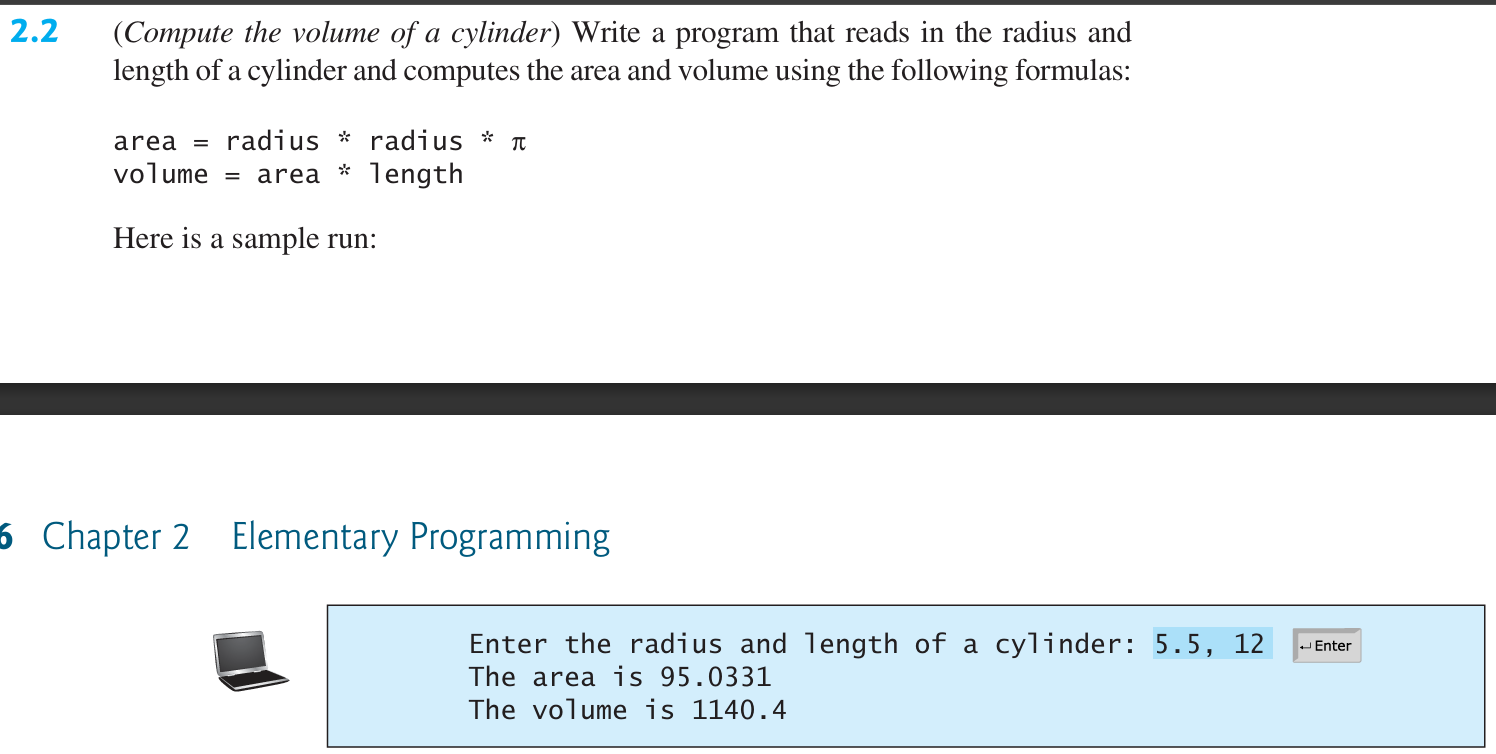
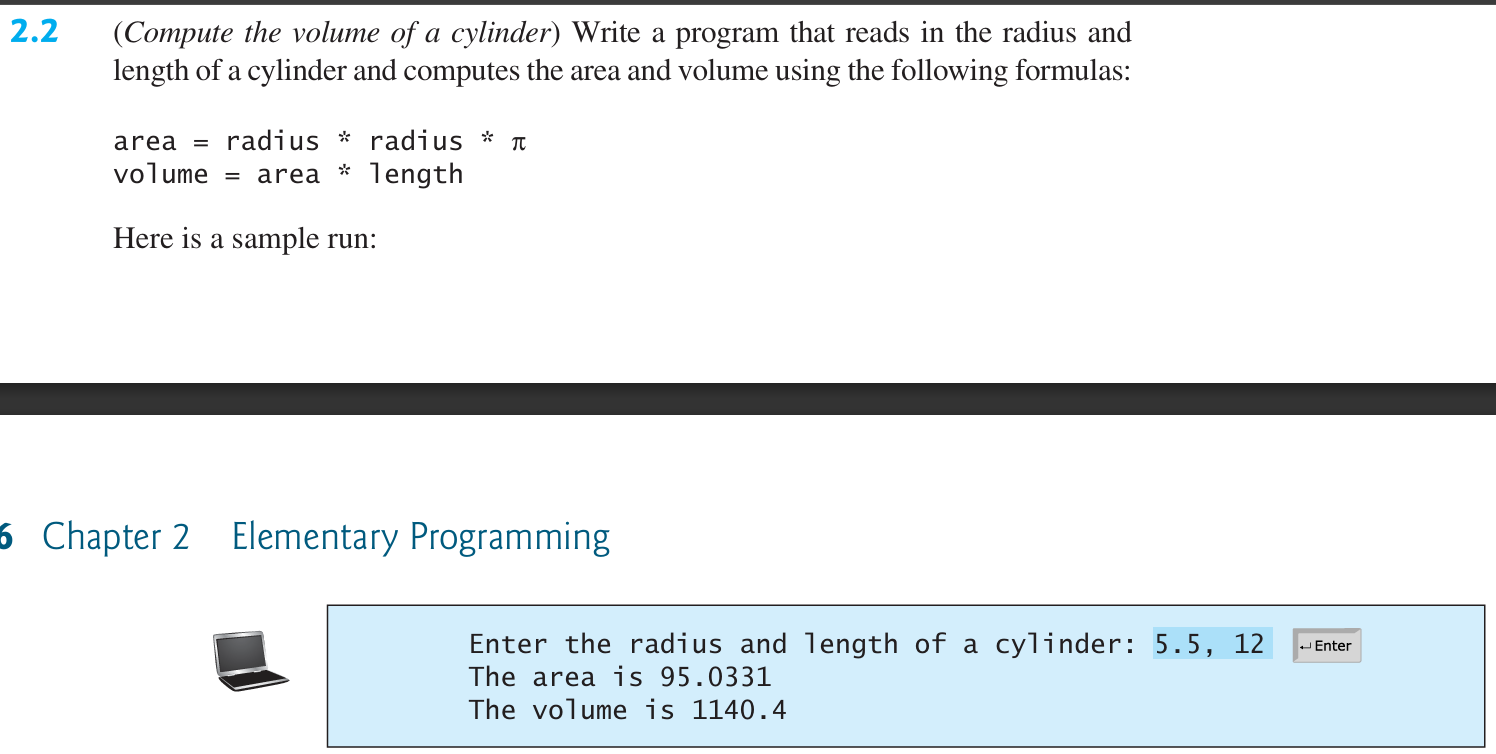
print("Fahrenheit")

Output:



Figure 1.1: Output

*Problem no. 2.*



*Solution:*

Code:

import math

r, l = map(float, input("Enter the radius and length of a cylinder: ").split())

a = r \* r \* math.pi

v = a \* l

print("The area is ", end="")

print(a)

print("The volume is ", end="")

print(v)

Output:

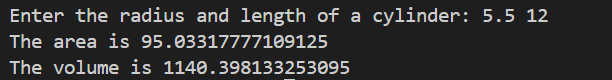
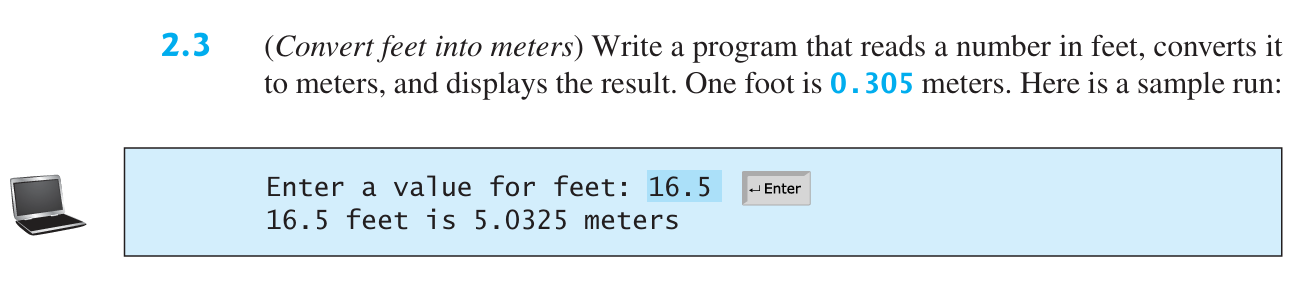


Figure 2.1: Output

*Problem no. 3.*



*Solution:*

Code:

feet = float(input("Enter a value for feet: "))

meter =  0.305 \* feet

print(feet, end=" ")

print("feet is ", end="")

print(meter, end=" ")

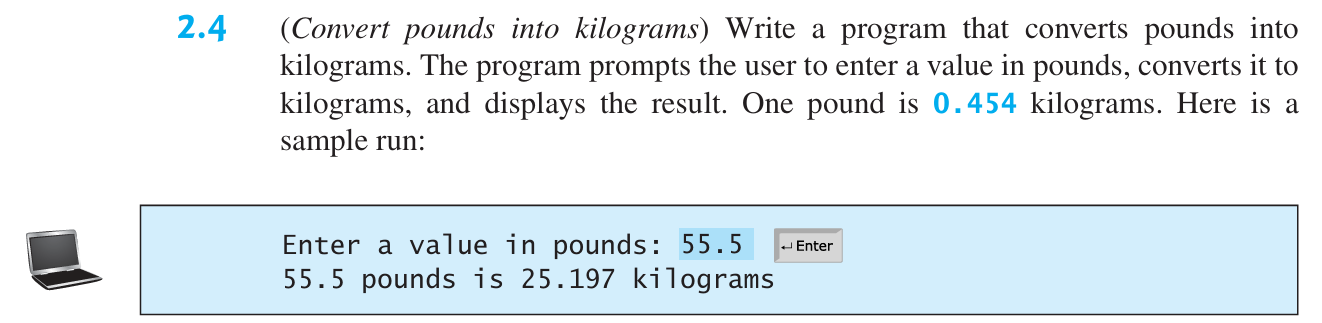
print("meters")

Output:



Figure 3.1: Output

*Problem no. 4.*



*Solution:*

Code:

pound = float(input("Enter a value in pounds: "))

kg =  0.454  \* pound

print(pound, end=" ")

print("pounds is ", end="")

print(kg, end=" ")

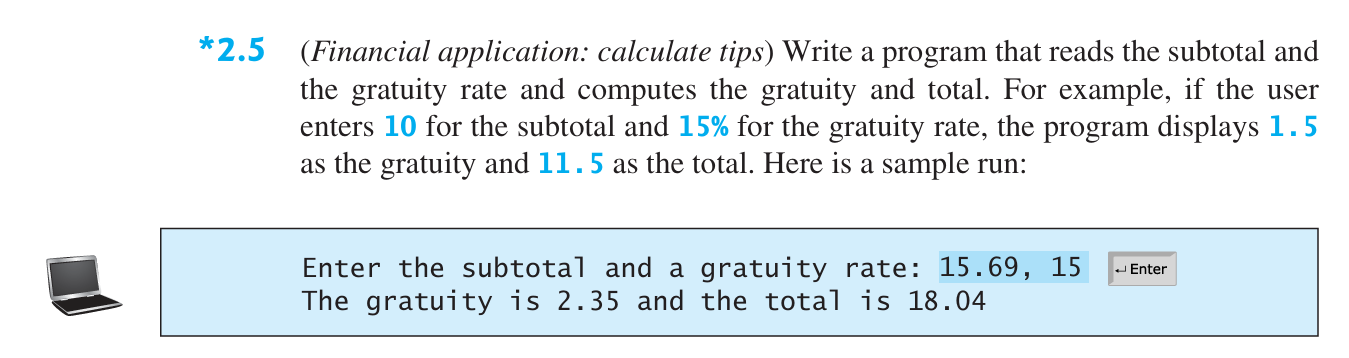
print("kilograms")

Output:



Figure 4.1: Output

*Problem no. 5.*



*Solution:*

Code:

subtotal, gratuityRate = map(float, input("Enter the subtotal and a gratuity rate: ").split(","))

gratuity = round(subtotal \* gratuityRate / 100, 2)

total = round(subtotal + gratuity, 2)

print("The gratuity is ", end="")

print(gratuity, end=" ")

print("and the total is ", end="")

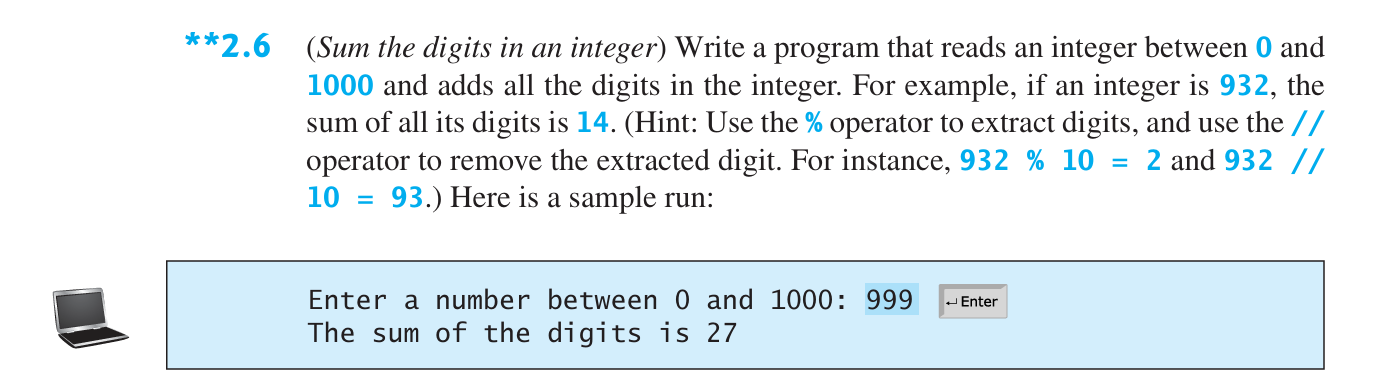
print(total)

Output:



Figure 5.1: Output

*Problem no. 6.*



*Solution:*

Code:

n = float(input("Enter a number between 0 and 1000: "))

sum = 0

while(n>0):

    sum += n % 10

    n //= 10

print("The sum of the digits is ", end="")

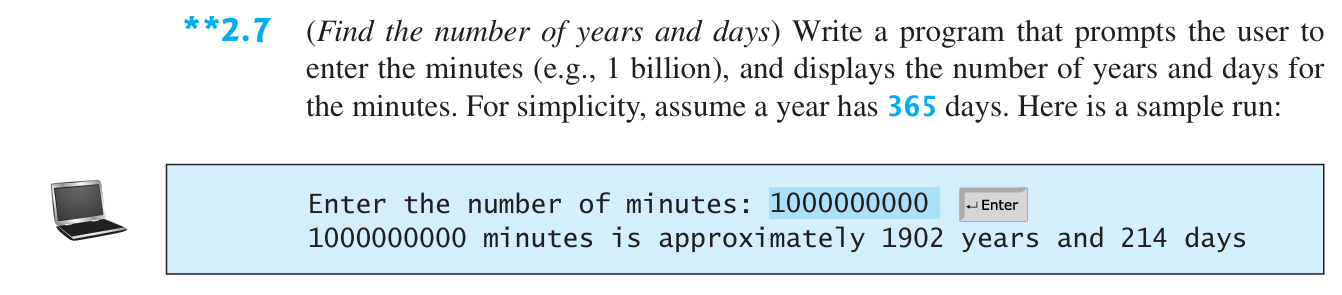
print(int(sum))

Output:



Figure 6.1: Output

*Problem no. 7.*



*Solution:*

Code:

m = float(input("Enter the number of minutes: "))

y = int(m / (60\*24\*365))

d = int((m % (60\*24\*365)) / (60\*24))

print(m, end=" ")

print("minutes is approximately", end=" ")

print(y, end=" ")

print("years", end=" ")

print(d, end=" ")

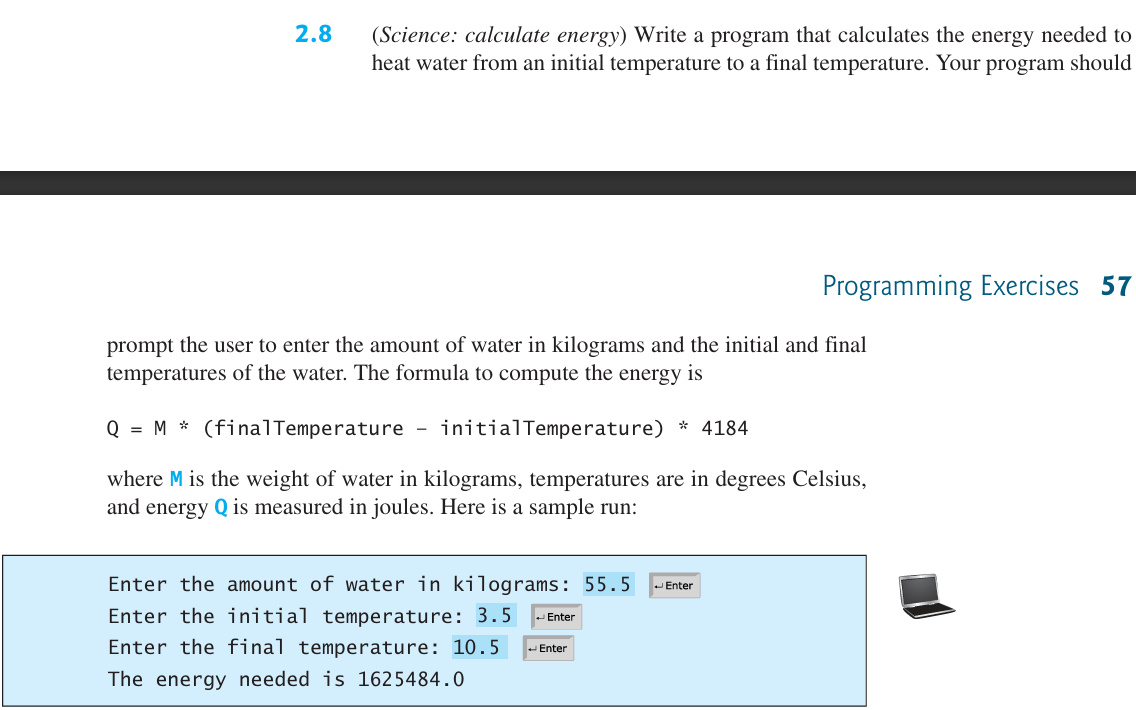
print("days")

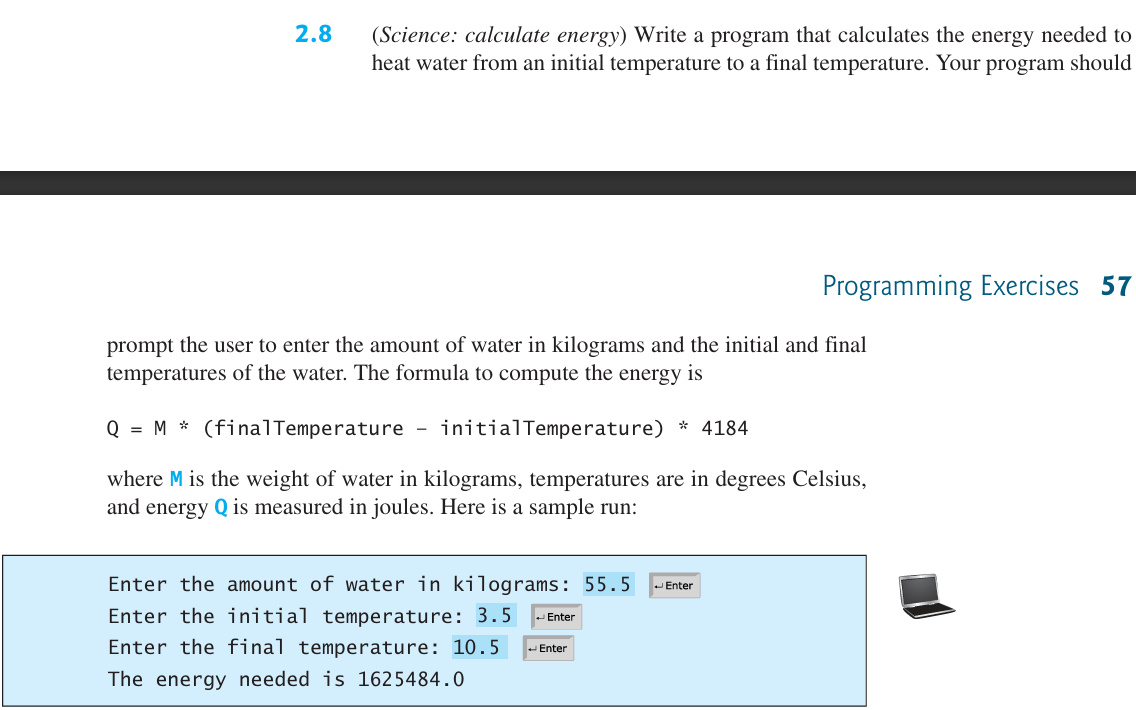
Output:



Figure 7.1: Output

*Problem no. 8.*





*Solution:*

Code:

w = float(input("Enter the amount of water in kilograms: "))

t1 = float(input("Enter the initial temperature: "))

t2 = float(input("Enter the final temperature: "))

e = w \* (t2 - t1) \* 4184

print("The energy needed is", end=" ")

print(e)

Output:

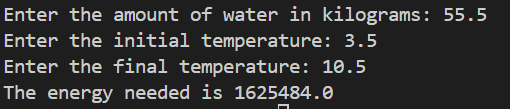
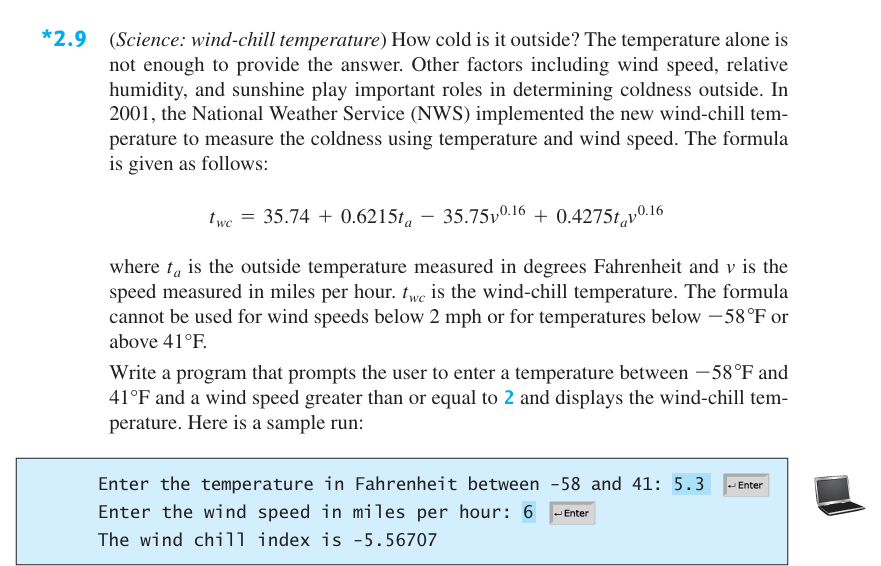


Figure 8.1: Output

*Problem no. 9.*



*Solution:*

Code:

t = float(input("Enter the temperature in Fahrenheit between -58 and 41: "))

v = float(input("Enter the wind speed in miles per hour: "))

c = round(35.74 + 0.6215\*t - 35.75\*(v\*\*0.16) + 0.4275\*t\*(v\*\*0.16), 5)

print("The wind chill index is", end=" ")

print(c)

Output:

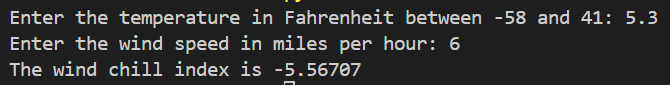
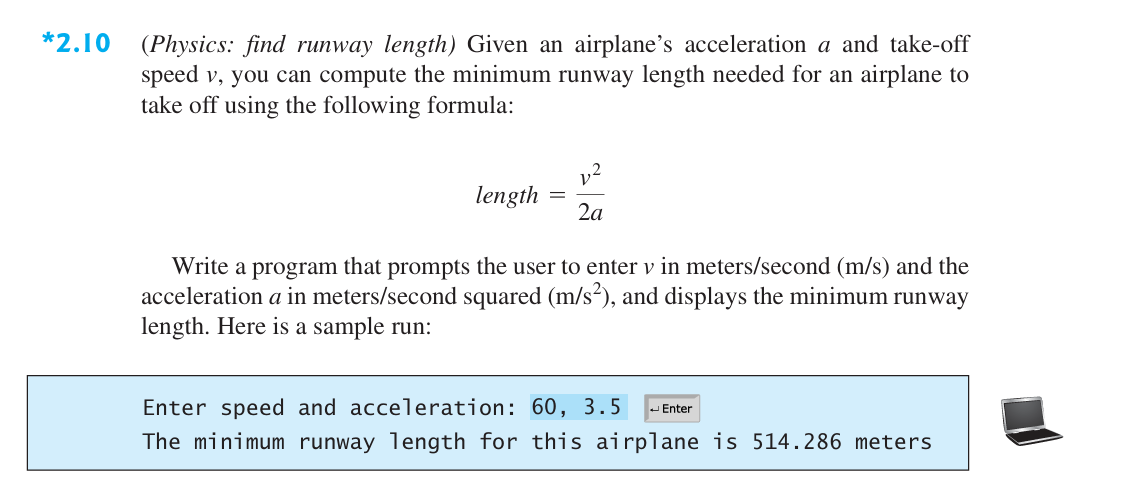


Figure 9.1: Output

*Problem no. 10.*



*Solution:*

Code:

v, a = map(float, input("Enter speed and acceleration: ").split(","))

l = round((v\*\*2)/(2\*a), 3)

print("The minimum runway length for this airplane is", end=" ")

print(l, end=" ")

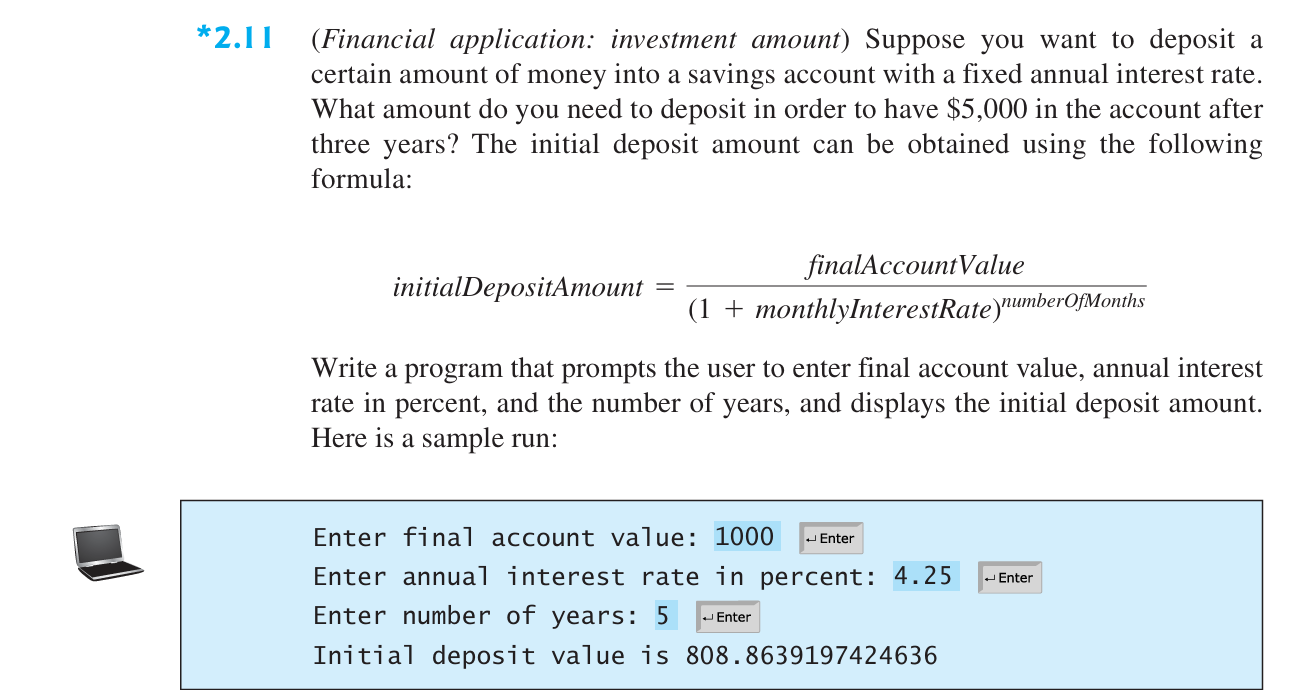
print("meters")

Output:



Figure 10.1: Output

*Problem no. 11.*



*Solution:*

Code:

a = float(input("Enter final account value: "))

r = float(input("Enter annual interest rate in percent: "))

y = float(input("Enter number of years: "))

d = a / ((1 + (r/100)) \*\* y)

print("Initial deposit value is", end=" ")

print(d)

Output:

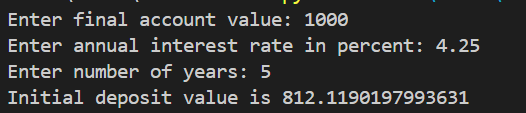
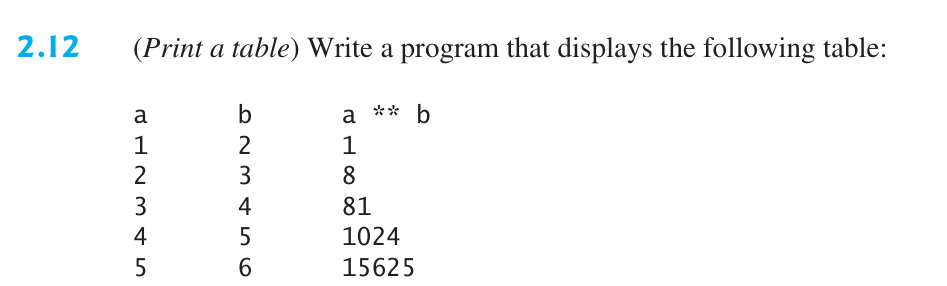


Figure 11.1: Output

*Problem no. 12.*



*Solution:*

Code:

print('a' , end="      ")

print("b" , end="      ")

print("a\*\*b")

for i in range(1,6):

    print(i , end="      ")

    print(i+1 , end="      ")

    print(i\*\*(i+1))

Output:

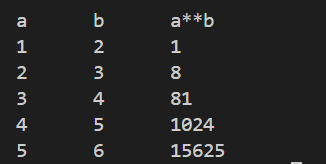
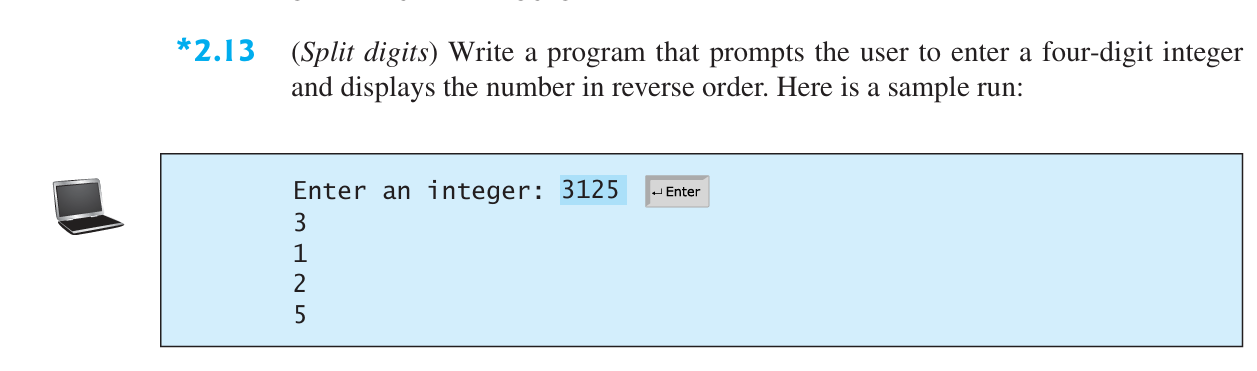


Figure 12.1: Output

*Problem no. 13.*



*Solution:*

Code:

n = int(input("Enter an integer: "))

d = 0

a = []

i = 0

while(n>0):

 a.append(n%10)

 n //=10

 i += 1

while(i != 0):

    print(a[i-1])

    i -= 1

Output:

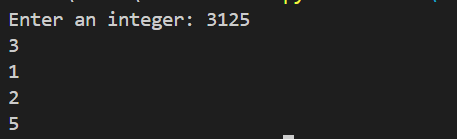
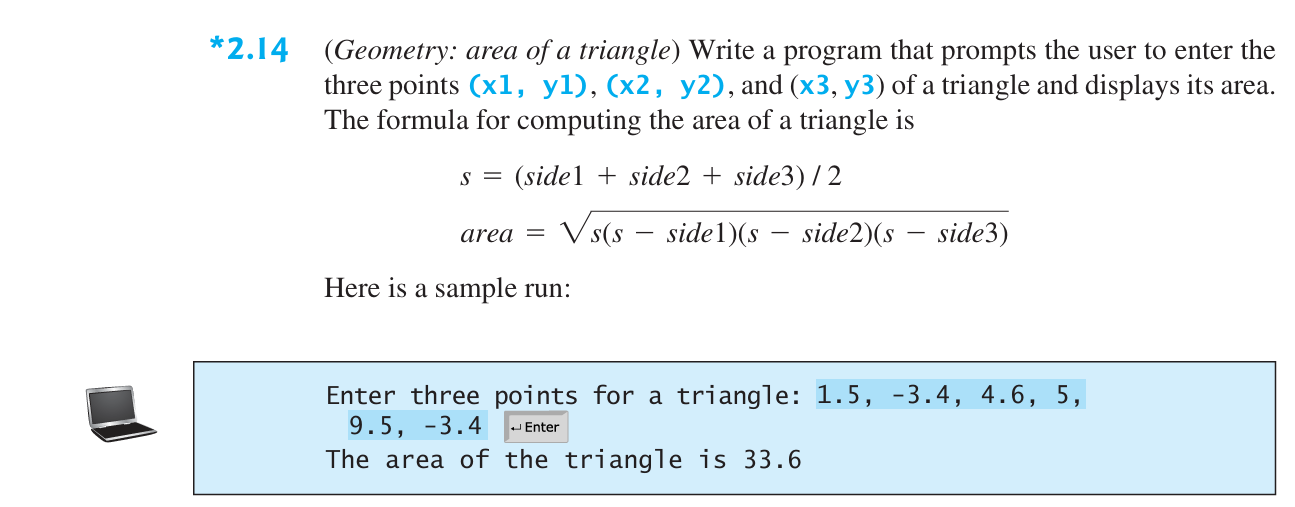


Figure 13.1: Output

*Problem no. 14.*



*Solution:*

Code:

import math

x1, y1, x2, y2, x3, y3 = map(float, input("Enter three points for a triangle: ").split(","))

side1 = math.sqrt(((x1-x2)\*\*2) + ((y1-y2)\*\*2))

side2 = math.sqrt(((x3-x2)\*\*2) + ((y3-y2)\*\*2))

side3 = math.sqrt(((x1-x3)\*\*2) + ((y1-y3)\*\*2))

s = (side1 + side2 + side3) / 2

a = round(math.sqrt(s\*(s- side1)\*(s- side2)\*(s- side3)), 1)

print("The area of the triangle is", end=" ")

print(a)

Output:

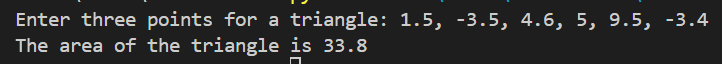
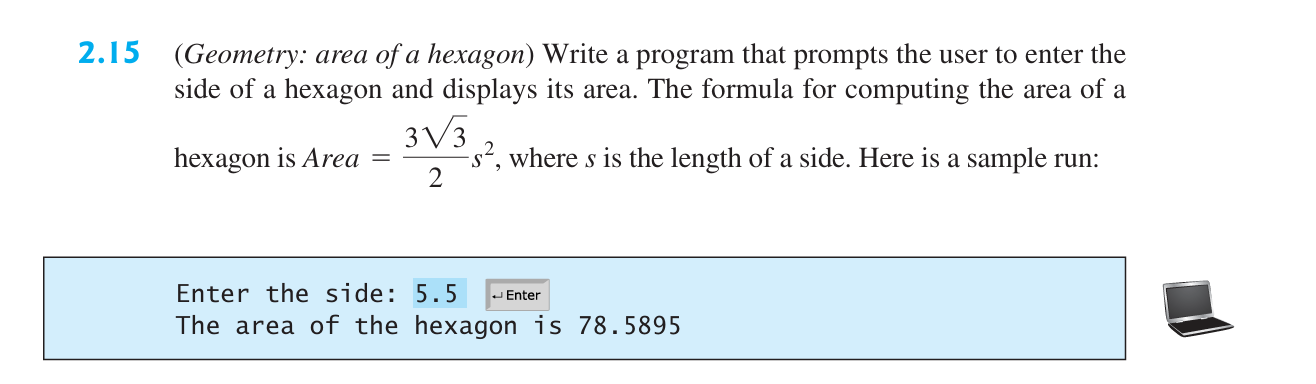


Figure 14.1: Output

*Problem no. 15.*



*Solution:*

Code:

import math

s = float(input("Enter the side: "))

a = round((3\*math.sqrt(3)\*(s\*\*2))/2, 4)

print("The area of the hexagon is", end=" ")

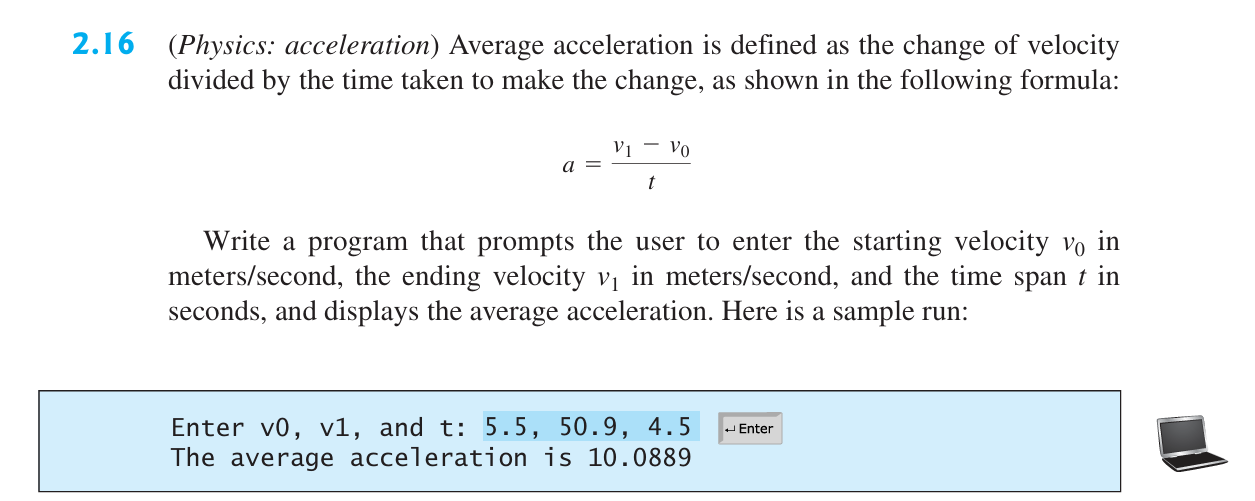
print(a)

Output:



Figure 15.1: Output

*Problem no. 16.*



*Solution:*

Code:

v0, v1, t = map(float, input("Enter v0, v1, and t: "). split(","))

a = round((v1-v0)/t, 4)

print("The average acceleration is", end=" ")

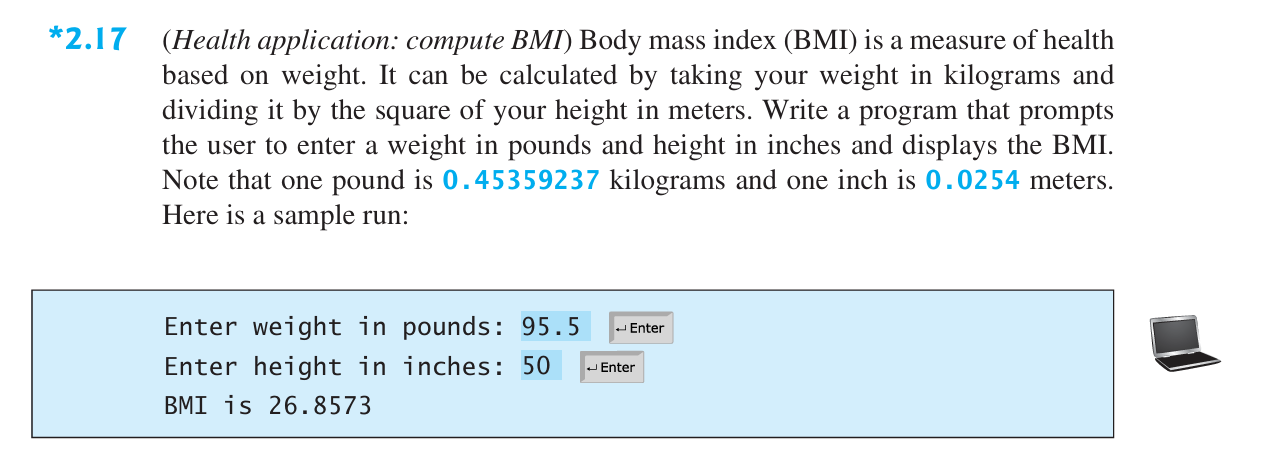
print(a)

Output:



Figure 16.1: Output

*Problem no. 17.*



*Solution:*

Code:

w = float(input("Enter weight in pounds: ")) \* 0.45359237

h = float(input("Enter height in inches: ")) \* 0.0254

bmi = round(w / (h \*\* 2), 4)

print("BMI is", end=" ")

print(bmi)

Output:

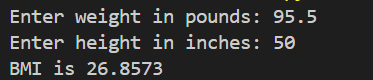
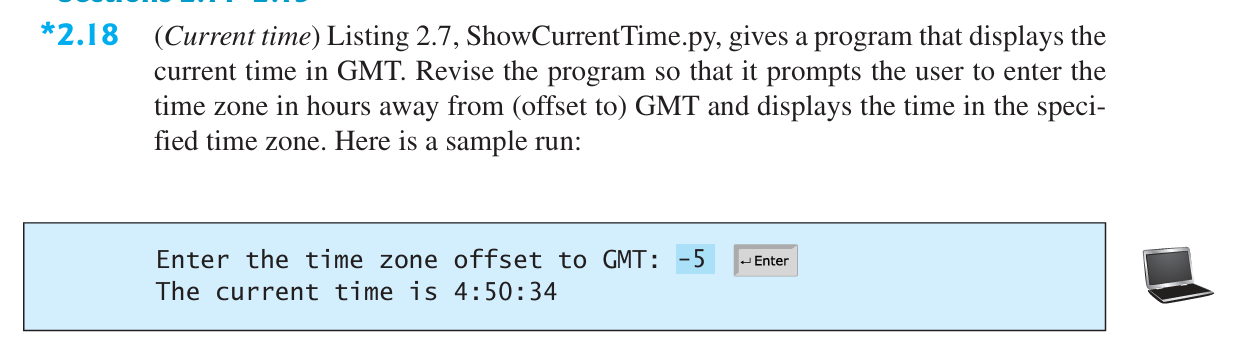


Figure 17.1: Output

*Problem no. 18.*



*Solution:*

Code:

import time

offset = int(input("Enter the time zone offset to GMT: "))

current\_time = time.time()

total\_seconds = int(current\_time)

current\_second = total\_seconds % 60

total\_minutes = total\_seconds // 60

current\_minute = total\_minutes % 60

total\_hours = total\_minutes // 60

current\_hour = total\_hours % 24

current\_hour = (current\_hour + offset) % 24

print(f"The current time is {current\_hour:02}:{current\_minute:02}:{current\_second:02}")

Output:

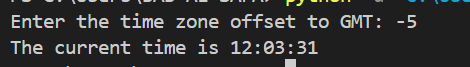
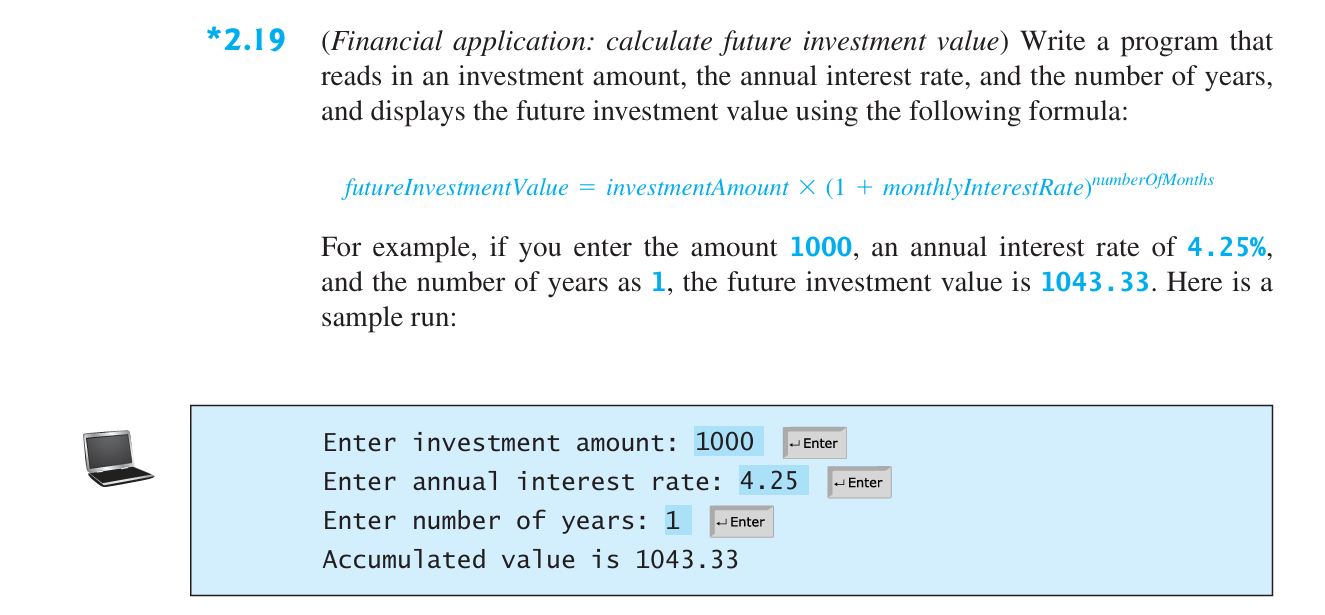


Figure 18.1: Output

*Problem no. 19.*



*Solution:*

Code:

i = float(input("Enter investment amount: "))

r = float(input("Enter annual interest rate: ")) / 100

y = float(input("Enter number of years: "))

a = round( i \* (1 + r)\*\*y, 2)

print("Accumulated value is", end=" ")

print(a)

Output:

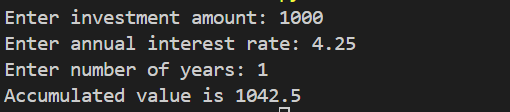
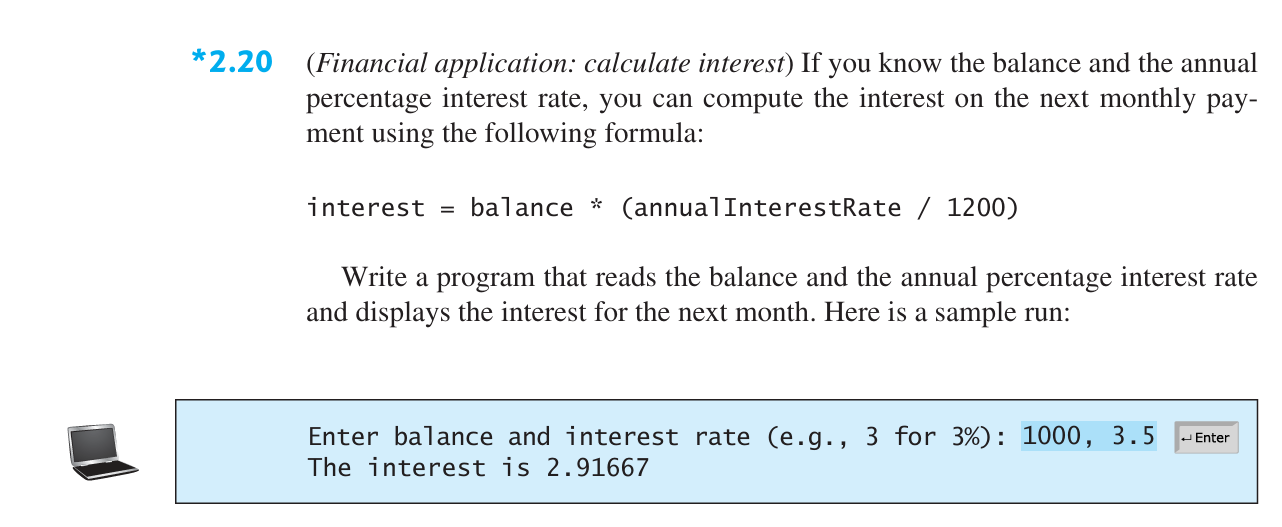


Figure 19.1: Output

*Problem no. 20.*



*Solution:*

Code:

b, r = map(float, input("Enter balance and interest rate (e.g., 3 for 3%): ").split(","))

i = round(b \* (r / 1200), 5)

print("The interest is", end=" ")

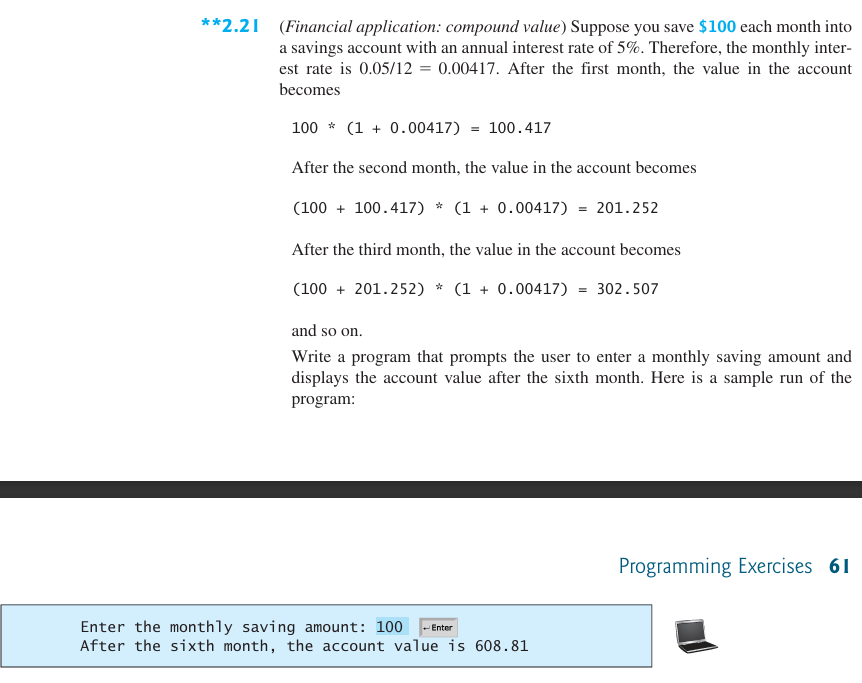
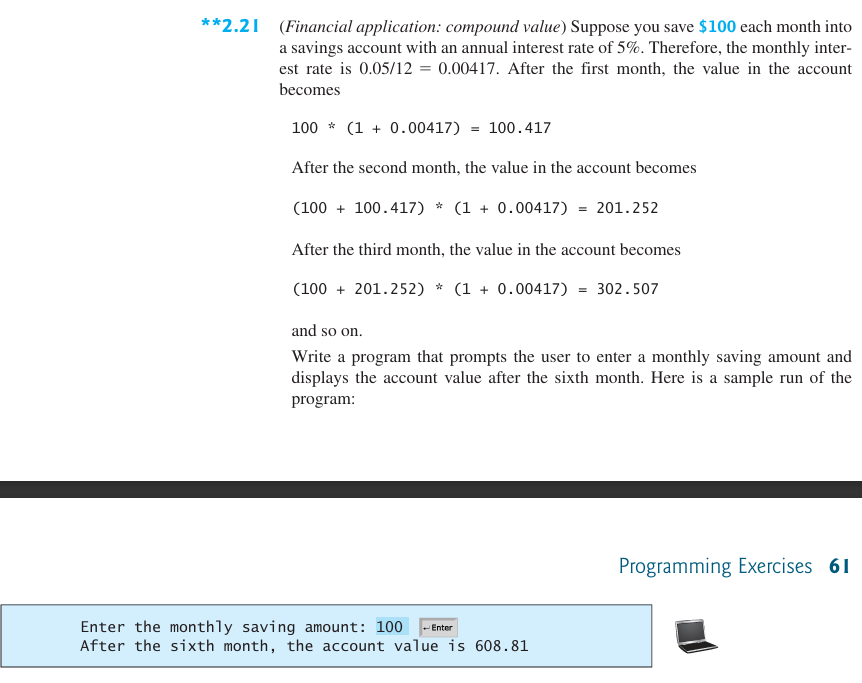
print(i)

Output:



Figure 20.1: Output

*Problem no. 21.*



*Solution:*

Code:

s = float(input("Enter the monthly saving amount: "))

a = 0

for i in range(6):

    a = (a+s)\*(1+(0.05/12))

print("After the sixth month, the account value is", end=" ")

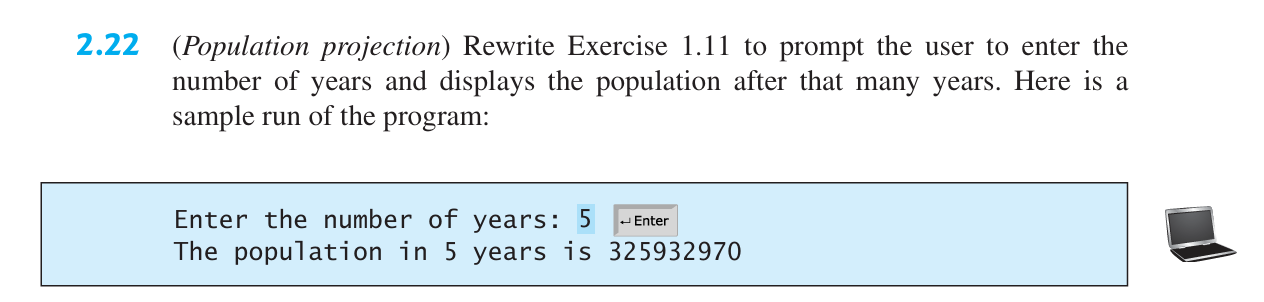
print(round(a, 2))

Output:



Figure 21.1: Output

*Problem no. 22.*



*Solution:*

Code:

y = int(input("Enter the number of years: "))

cp = 312032486

s = y\*60\*60\*24\*365

p = cp + (s//7) - (s//13) + (s//45)

print("The population in", end=" ")

print("y", end=" ")

print("years is", end=" ")

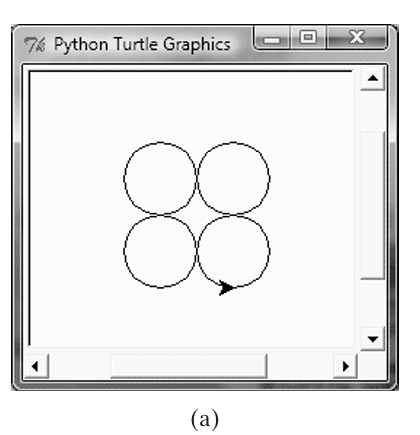
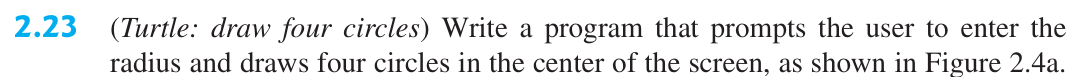
print(p)

Output:



Figure 22.1: Output

*Problem no. 23.*



*Solution:*

Code:

import turtle

radius = float(input("Enter the radius for the circles: "))

turtle.penup()

positions = [(-radius, radius), (radius, radius), (-radius, -radius), (radius, -radius)]

for pos in positions:

    turtle.goto(pos)

    turtle.pendown()

    turtle.circle(radius)

    turtle.penup()

turtle.done()

Output:

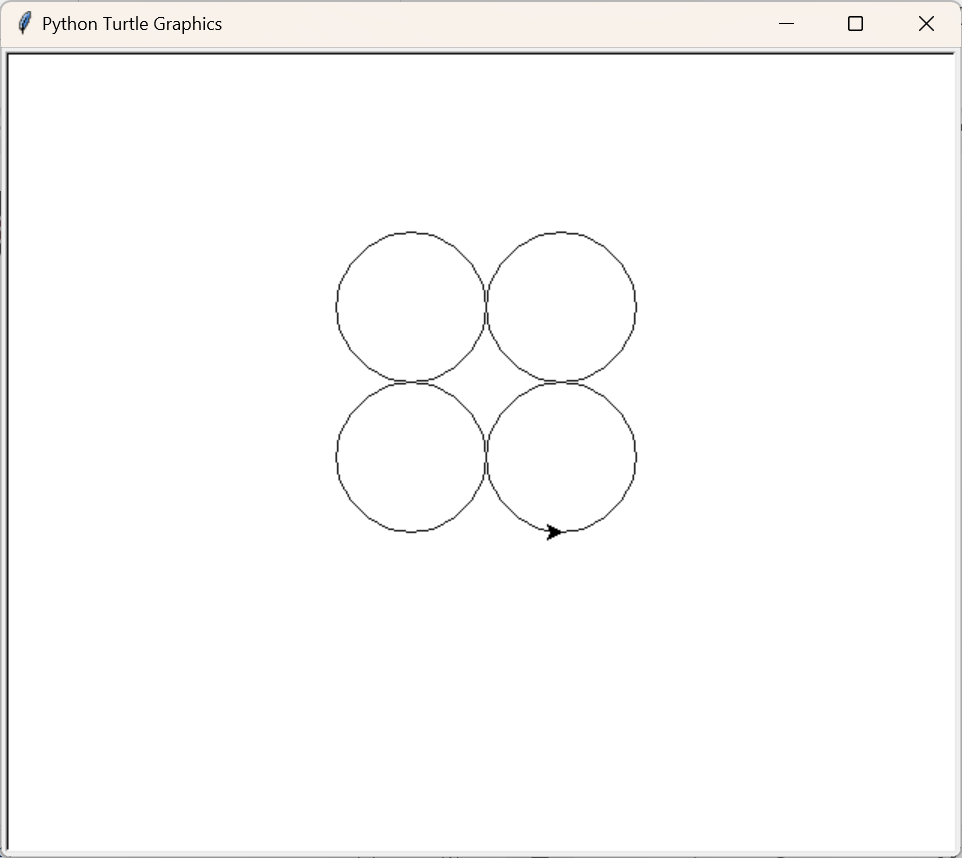


Figure 23.1: Output