**pp 31-35 Exercises 1-60 odd, 61, 63, 64, 68, 69, 72, 73, 77, 78**

1. **Without computer**: 3\*4 =12

**Using Python :**

**>>> 3\*4**

**12**

**>>>**

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1. **Without computer**: 1/(2\*\*3) =1/8 =0.125

**Using Python :**

>>> 1/(2\*\*3)

0.125

>>>



1. **Without computer**: (5-3)\*4 =2\*4 =8

**Using Python :**

>>> (5-3)\*4

8

>>>

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1. **Without computer**: 7//3 =2

**Using Python :**

>>> 7//3

2

>>>

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1. **Without computer**: 7 % 3 =1

Using Python :

>>> 7 % 3

1

>>>

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1. **Without computer**: 5//5 =1

Using Python :

>>> 5//5

1

>>>

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1. sales.2008 is **invalid** variable name
2. fOrM\_1040 = 123 is **valid** variable name
3. expenses? is **invalid** variable name

**In Exercises 19 through 24, evaluate the numeric expression**

**where *a*** = **2**, ***b*** = **3**, **and *c*** = **4**.

**Question# 19**

**(a \* b) + c**

**>>> a =2**

**>>> b =3**

**>>> c =4**

**>>> (a \* b) + c**

**10**

**>>>**

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**Question# 21**

(1 + b) \* c

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**Question# 23**

b \*\* (c - a)

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**In Exercises 25 through 30, write lines of code to calculate and display the values.**

**Question# 25**

7.8 + 5

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**Question# 27**

* 1. % of 20

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**Question# 29**

17(3+162)

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**Question : 31**

|  |  |  |
| --- | --- | --- |
|  | **x** | **y** |
| **x= 2** | 2 | N/A |
| **y=3\* x** | 2 | 6 |
| **x=y+ 5** | 11 | 6 |
| **print(x + 4)** | 11 | 6 |
| **y=y+ 1** | 11 | 7 |

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**Question : 33**

a = 4  
 b = 5 \* a

print(a + b)

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**Question 35:**

num = 5

num \*= 2

print(num)

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**Question 37:**

totalMinutes = 135  
hours = totalMinutes // 60

minutes = totalMinutes % 60

print(hours, minutes)

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**Question 39:**

a = 2

b = 3

a + b = c ----**error : cannot assign to operator**

print(b)

**Problem in code :**

3rd Line should be : **c = a + b**

**Question 41:**

0.05 = interest ---error : cannot assign to literal

balance = 800

print(interest \* balance)

**Problem in code :**

First line should be : **interest = 0.05**

**Question 43:**

int(10.75)

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**Question 45:**

abs(3 - 10)

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**Question 47:**

round(3.1279, 3)

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**Questions : 49 ,51 and 53**

where *a* = 5 and *b* = 3

int(-a / 2)

abs(a - 5)

round(a + .5)

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**In Exercises 55 through 60, rewrite the statements using augmented assignment operators.**

**Questions : 55 :** cost = cost + 5

**Answer : cost += 5**

**Questions : 57 :** cost = cost / 6

**Answer : cost /= 6**

**Questions : 59 :** sum = sum % 2

**Answer : sum %= 2**

**Questions : 61**

Calculate Profit The following steps calculate a company’s profit.

1. Create the variable revenue and assign it the value 98,456.

**Answer : revenue = 98456**

(b)  Create the variable costs and assign it the value 45,000.

**Answer : costs = 45000**

(c)  Create the variable profit and assign it the difference between the values of the

variables revenue and costs.

**Answer : profit = revenue - costs**

(d)  Display the value of the variable profit.

**Answer : print(profit)**

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**Questions : 63**

Discounted Price The following steps calculate the price of an item after a 30% reduction.

1. Create the variable price and assign it the value 19.95.

**Answer : price = 19.95**

1. Create the variable discountPercent and assign it the value 30.

**Answer : discountPercent = 30**

(c)  Create the variable markdown and assign it the value of (discountPercent divided

by 100) times the value of price.

**Answer : markdown = (discountPercent / 100) \* price**

(d) Decrease the value of price by markdown.

**Answer : price -= markdown**

(e)  Display the value of price (rounded to two decimal places).  **Answer : print(round(price, 2))**

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**Questions: 64**

Break-Even Point The following steps calculate a company’s break-even point, the number of units of goods the company must manufacture and sell in order to break even.

(a)  Create the variable fixedCosts and assign it the value 5,000.

**Answer :**  **fixedCosts = 5000**

(b)  Create the variable pricePerUnit and assign it the value 8.

**Answer : pricePerUnit = 8**

(c)  Create the variable costPerUnit and assign it the value 6.

**Answer : costPerUnit = 6**

(d)  Create the variable breakEvenPoint and assign it the value of fixedCosts divided by (the difference of the values of pricePerUnit and costPerUnit).

**Answer : breakEvenPoint = fixedCosts/( pricePerUnit – costPerUnit)**

(e)  Display the value of the variable breakEvenPoint

**Answer : print(breakEvenPoint)**

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**Questions: 68**

Profit from Stock The following steps calculate the percentage profit from the sale of a stock.

1. Create the variable purchasePrice and assign it the value 10.

**Answer : purchasePrice = 10**

1. Create the variable sellingPrice and assign it the value 15.

**Answer : sellingPrice = 15**

1. Create the variable percentProfit and assign it 100 times the value of the difference between sellingPrice and purchasePrice divided by purchasePrice.

**Answer : percentProfit = 100 \* ((sellingPrice- purchasePrice)/purchasePrice)**

1. Display the value of the variable percentProfit.

**Answer : print(percentProfit)**

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**In Exercises 69 through 78, write a program to solve the problem and display the answer. The program should use variables for each of the quantities.**

**Questions : 69**

Corn Production Suppose each acre of farmland produces 18 tons of corn. How many tons of corn can be grown on a 30-acre farm?

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**Questions : 72**

Gas Mileage A motorist wants to determine her gas mileage. At 23,352 miles (on the odometer) the tank is filled. At 23,695 miles the tank is filled again with 14 gallons. How many miles per gallon did the car average between the two fillings?

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**Questions : 73**

Water Usage A survey showed that Americans use an average of 1,600 gallons of water per person per day, including industrial use. How many gallons of water are used each year in the United States? Note: The current population of the United States is about 315 million people.

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**Questions : 77**

U.S. National Debt Suppose the U.S. national debt is 1.68 \* 10^3 dollars and the U.S. population is 3.1588\*10^8. Calculate the per capita U.S. national debt. Display the answer rounded to the nearest whole number.

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**Questions : 78**

Calories Estimate the number of calories in one cubic mile of chocolate ice cream. Note: There are 5,280 feet in a mile and one cubic foot of chocolate ice cream contains about 48,600 calories.

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**pp 43-49 Exercises 1-92 odd, 97, 100, 102, 107, 110, 111**

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**In Exercises 47 through 70, determine the output displayed by the lines of code.**

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**Question 71 :**

Give a simple expression that lops off the last character of a string.

**Answer : s[:-1]**

**Question 73 :**

What is the negative index of the first character in a string of eight characters?

**Answer : -8**

**Question 75 :**

(True or false) If n is the length of str1, then str1[n – 1:] is the string consisting of the last character of str1.

**Answer : True**

**Question 77 :**

(True or false) str1[:n] consists of the first n characters of str1.

**Answer : True**

**In Exercises 79 through 92, identify all errors.**

**Question 79:**

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**Answer : 234-5678 should be surrounded with quotation marks.**

**Question 81:**

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**Answer : *for* is a reserved word and cannot be used as a variable name.**

**Question 83:**

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**Answer : The string should be replaced with "Say it ain't so."**

**Question 85:**

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**Answer : Upper should be changed to upper.**

**Question 87:**

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**Answer : A string cannot be concatenated with a number. The second line should be written as : print("Age:", age).**

**Question 89:**

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**Answer : *find* is not an allowable method for a number, but only for a string.**

**Question 91:**

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**Answer : The string “Python” does not have a character of index 8.**

**Question 97:**

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**Question 100:**

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**Question 102:**

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**Question 107:**

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**Question 110:**

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**Question 111:**

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**Exercises 2.3**

**pp 54-56 Exercises 1-53 odd, 55, 57, 58**

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**Question 51 :**

Do print("Hello") and print("Hello", end="\n") produce the same output?

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**Answer : Yes**

**Question 53 :**

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**Question 55 :**

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**Question 57 :**

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**Question 58 :**

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**Exercises 2.4**

**pp 66-71 Exercises 1-100 odd, 101, 102, 103**

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**Exercise 95**

threeRs = ["reading", "riting", "rithmetic"]

print(threeRs[3])

**Index Error: list index out of range.**

**Answer : There is no item with index 3 in the list**

**Exercise 97**

list1 = [1, "two", "three", 4]

print(" ".join(list1))

**TypeError: sequence item 0: expected str instance, int found**

**Answer : Join can only be used with list consisting of all string.**

**Exercise 99**

title = ("The", "Call", "of", "the", "Wild")

title[1] = "Calm"

print(" ".join(title))

**TypeError: 'tuple' object does not support item assignment**

**Answer : The 2nd line is invalid as Items in a tuple cannot be directly reassigned values.**

**Exercise 101**

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**Exercise 102**

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**Exercise 103**

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**pp 74-76  Programming Projects 1-6**

**Question 1 :**

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**Question 2 :**

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**Question 3 :**

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**Question 4 :**

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**Question 5:**

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**Question 6:**

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