

Worksheet 22: variables, operators and print

Variables, operators, print() with sep and end, input(), int() and float() - 115 questions

Name _____ Class _____ Date _____

Remember

```
print(value1, value2, ..., sep=" ", end="\n")
```

sep	goes between the values. Default: one space.
end	goes after the last value. Default: "\n", a new line.
"\n"	inside any string means "start a new line here".
/ // % **	division (always a decimal), whole-number division, remainder, power.
x += 3	means <code>x = x + 3</code> . Also <code>-=</code> , <code>*=</code> , <code>/=</code> .
input()	always gives a string . Use <code>int()</code> or <code>float()</code> to do maths with it.

Instructions

- Write the output **exactly** as Python shows it: every space, comma and line break counts.
- Where the user types something, the value appears on screen after the prompt, and the cursor then moves to the next line. Write it too.
- If a line would be blank, leave an empty line in your answer.
- Do not use a computer until you have finished. Then check your answers in Python.

Section A - Variables and operators

Write the output of each program.

1

```
x = 5
y = 3
print(x + y)
print(x - y)
print(x * y)
```

OUTPUT

2

```
a = 10
a = a + 4
print(a)
```

OUTPUT

3

```
print(17 / 4)
print(17 // 4)
print(17 % 4)
```

OUTPUT

7

```
x = 7
y = 2
result = x ** y - x // y * 3
print(result)
```

OUTPUT

4

```
print(2 ** 5)
print(5 ** 2)
print(10 / 2)
```

OUTPUT

8

```
first = "Py"
second = "thon"
print(first + second)
print(first * 3)
```

OUTPUT

5

```
print(10 - 4 - 3)
print(10 - (4 - 3))
```

OUTPUT

9

```
word = "ha"
laugh = word * 2 + "!"
print(laugh)
```

OUTPUT

6

```
print(2 + 3 * 4)
print((2 + 3) * 4)
```

OUTPUT

10

```
price = 40
qty = 3
total = price * qty
total -= 20
print(total)
```

OUTPUT

11

```
n = 9
print(n % 2 == 1)
print(n > 10)
```

OUTPUT

12

```
a = 5
b = 8
print(a < b)
print(a == b)
print(a != b)
```

OUTPUT

13

```
p = True
q = False
print(p and q)
print(p or q)
print(not q)
```

OUTPUT

14

```
x = 6
print(x > 3 and x < 10)
print(x < 3 or x == 6)
```

OUTPUT

15

```
x = 2
x = x * x
x = x * x
print(x)
```

OUTPUT

Section B - Assignment operators

`x += 3` is short for `x = x + 3`. Write the output of each program.

16

```
score = 0
score += 10
score += 5
score -= 3
print(score)
```

OUTPUT

17

```
n = 20
n *= 2
n /= 3
print(n)
```

OUTPUT

18

```
x = 10
x /= 4
print(x)
```

OUTPUT

19

```
x = 17
x %= 5
print(x)
```

OUTPUT

20

```
x = 3
x **= 2
x -= 1
print(x)
```

OUTPUT

21

```
a = 5
b = 2
a += b
b *= a
print(a, b)
```

OUTPUT

22

```
a = 8
b = 3
a -= b
b += a
a *= 2
print(a, b)
```

OUTPUT

23

```
word = "ab"
word += "c"
word *= 2
print(word)
```

OUTPUT

25

```
total = 50
total -= 15
total /= 5
total += 1
print(total)
```

OUTPUT

24

```
x = 100
x //= 7
x %= 4
print(x)
```

OUTPUT

Section C - Trace tables

Fill in each row with the value of every variable **after** that statement runs. Write a dash (-) if the variable does not exist yet. Write anything printed in the Output column.

26

Statement	a	b	Output
a = 6			
b = 4			
a = a + b			
b = a - b			
a = a - b			
print(a, b)			

27

Statement	x	y	Output
x = 5			
y = 3			
x += y			
y *= x			
x -= 2			
print(x, y)			

28

Statement	a	b	temp	Output
a = 4				
b = 9				
temp = a				
a = b				
b = temp				
print(a, b)				

29

Statement	p	q	Output
p = 3			
q = p			
p += 7			
q *= 2			
print(p, q)			

30

Statement	m	n	r	Output
m = 17				
n = 5				
r = m % n				
m = m // n				
n += r				
print(m, n, r)				

31

Statement	x	y	z	Output
x = 2				
y = x ** 3				
z = y - x				
x = z // 2				
y %= 3				
print(x, y, z)				

32

Statement	a	b	c	Output
a = 10				
b = 3				
c = a // b				
a %= b				
b = c * a + b				
print(a, b, c)				

33

Statement	total	price	Output
total = 0			
price = 25			
total += price			
price -= 5			
total += price * 2			
print(total)			

34

Statement	x	y	Output
x = 7			
y = 2			
x = x * y + 1			
y = x // y			
x %= y			
print(x, y)			

35

Statement	n	q	r	Output
n = 15				
q = n // 4				
r = n % 4				
print(q * 4 + r)				

Section D - sep

Write the output of each program.

36

```
print("a", "b", "c")
```

OUTPUT

40

```
print("Hello", "World", sep="\n")
```

OUTPUT

37

```
print("a", "b", "c", sep="")
```

OUTPUT

41

```
print("A", sep="***")
```

OUTPUT

38

```
print(10, 20, 30, sep=", ")
```

OUTPUT

42

```
a = 5
b = 2
print(a, "+", b, "=", a + b)
```

OUTPUT

39

```
day = 9
month = 10
year = 2026
print(day, month, year, sep="/")
```

OUTPUT

43

```
a = 5
b = 2
print(a, "+", b, "=", a + b, sep="")
```

OUTPUT

44

```
x = 7
print(x // 2, x % 2, sep=" r ")
```

OUTPUT

45

```
word = "ha"
print(word, word, word, sep="")
```

OUTPUT

46

```
name = "Aisha"
print("Hi", name, "!", sep="")
```

OUTPUT

47

```
print("ab", "cd", sep="ab")
```

OUTPUT

48

```
a = 3
b = 4
print(a ** 2, b ** 2, sep=" and ")
```

OUTPUT

49

```
total = 250
print("Total", total, sep=": Rs. ")
```

OUTPUT

50

```
print("192", "168", "1", "1", sep=".")
```

OUTPUT

Section E - end

Write the output of each program.

51

```
print("Hello", end=" ")
print("World")
```

OUTPUT

52

```
print("A", end="")
print("B")
print("C")
```

OUTPUT

53

```
print("one", end=", ")
print("two", end=", ")
print("three")
```

OUTPUT

54

```
print("Loading", end="...")
print("done")
```

OUTPUT

55

```
print("Line 1", end="\n\n")
print("Line 2")
```

OUTPUT

56

```
a = 5
b = 3
print(a, end=" + ")
print(b, end=" = ")
print(a + b)
```

OUTPUT

57

```
print("Start", end="!")
print()
print("End")
```

OUTPUT

58

```
print("a", end="-")
print("b", end="-")
print("c", end="-")
print()
```

OUTPUT

59

```
total = 10
print(total, end=" ")
total += 5
print(total, end=" ")
total *= 2
print(total)
```

OUTPUT

60

```
print("Ready", end="")
print("Set", end="")
print("Go!")
```

OUTPUT

61

```
print("A")
print("B", end="")
print("C")
```

OUTPUT

62

```
print(end="Hi")
print("there")
```

OUTPUT

63

```
print("10", end="0")
print("0")
```

OUTPUT

64

```
x = 7
print(x, end=" ")
print(x * x, end=" ")
print(x * x * x)
```

OUTPUT

65

```
print("Up", end="\n")
print("Down", end=" ")
print("Left")
```

OUTPUT

Section F - sep and end together

Write the output of each program.

66

```
print("a", "b", sep="-", end="!")  
print("c")
```

OUTPUT

67

```
x = 1  
y = 2  
z = 3  
print(x, y, z, sep="+", end=" = ")  
print(x + y + z)
```

OUTPUT

68

```
print("x", "y", "z", sep="", end="")  
print("!")
```

OUTPUT

69

```
print("a", "b", sep="\n", end="\n---  
\n")  
print("c")
```

OUTPUT

70

```
h = 9  
m = 5  
print(h, m, sep=":", end=" AM\n")
```

OUTPUT

71

```
print("Rs", 150, sep=". ", end="/-\n")
```

OUTPUT

72

```
w = 4  
h = 5  
print(w, h, sep="x", end="=")  
print(w * h)
```

OUTPUT

73

```
print("A", "B", sep="", end="C")  
print("D", "E", sep="")
```

OUTPUT

74

```
a = 17
b = 5
print(a, "/", b, "=", a // b, end=",
")
print("remainder", a % b)
```

OUTPUT

75

```
print("1", "2", sep="0", end="0")
print("3")
```

OUTPUT

Section G - input(), int() and float()

Write the output of each program. Where the user types values, they are typed in the order shown.

76

```
n = input("Number: ")
print(n + n)
```

The user types 5

OUTPUT

79

```
a = int(input())
b = int(input())
print(a / b)
```

The user types 7 then 2

OUTPUT

77

```
n = int(input("Number: "))
print(n + n)
```

The user types 5

OUTPUT

80

```
a = int(input())
b = int(input())
print(a // b, a % b, sep=" r ")
```

The user types 17 then 5

OUTPUT

78

```
x = float(input("x: "))
print(x * 2)
```

The user types 2.5

OUTPUT

81

```
print(int(3.9))
print(int(-3.9))
```

OUTPUT

82

```
print(float(7))
print(float("2.50"))
```

OUTPUT

83

```
price = float(input("Price: "))
qty = int(input("Qty: "))
print("Total", price * qty, sep=" = ")
```

The user types 12.5 then 4

OUTPUT

84

```
side = int(input("Side: "))
print(side ** 2, side ** 3, sep=", ")
```

The user types 4

OUTPUT

85

```
c = float(input("Celsius: "))
f = c * 9 / 5 + 32
print(c, "C is", f, "F")
```

The user types 25

OUTPUT

86

```
m = int(input("Minutes: "))
print(m // 60, "h", m % 60, "min",
      sep="")
```

The user types 135

OUTPUT

87

```
x = int(input("x: "))
print(x % 2, x % 10, x // 10, sep=",")
```

The user types 47

OUTPUT

88

```
n = int(input("n: "))
print(n, end=" squared is ")
print(n * n)
```

The user types 12

OUTPUT

89

```
a = float(input("a: "))
b = int(input("b: "))
print(a + b, a * b, sep=" / ")
```

The user types 1.5 then 4

OUTPUT

92

```
name = input("Name: ")
age = int(input("Age: "))
print(name, "is", age, "years old",
      sep="_")
```

The user types Riya then 12

OUTPUT

90

```
marks = int(input("Marks out of 50: "))
print("Percent:", marks / 50 * 100,
      end="%\n")
```

The user types 42

OUTPUT

93

```
x = int(input("x: "))
y = int(input("y: "))
print(x > 5 and y > 5, x > 5 or y > 5,
      sep=" | ")
```

The user types 8 then 3

OUTPUT

91

```
x = int(input("x: "))
x *= 3
x -= 4
x /= 2
print(x)
```

The user types 10

OUTPUT

Section H - Find the error

Each program stops with an error. Write the name of the error (for example `ZeroDivisionError`), then rewrite the wrong line so it works.

94

```
a = input("A: ")
print(a + 5)
```

The user types `4`

ERROR NAME

FIXED LINE

95

```
n = int(input("Price: "))
print(n * 2)
```

The user types `2.5`

ERROR NAME

FIXED LINE

96

```
print("a", "b", sep=-)
```

ERROR NAME

FIXED LINE

97

```
price = 40
qty = 3
print(Price * qty)
```

ERROR NAME

FIXED LINE

98

```
age = 12
print("Age: " + age)
```

ERROR NAME

FIXED LINE

Section I - Fill the blank

Fill each so the program prints the wanted output. A blank needs an operator, `sep=...`, `end=...` or both.

99

```
a = 17
b = 5
print(a   b)
```

WANTED OUTPUT

2

FILL THE BLANK

100

```
a = 2
b = 10
print(a   b)
```

WANTED OUTPUT

1024

FILL THE BLANK

101

```
total = 7
total  3
print(total)
```

WANTED OUTPUT

21

FILL THE BLANK

102

```
d = 9
m = 10
y = 2026
print(d, m, y, )
```

WANTED OUTPUT

9/10/2026

FILL THE BLANK

103

```
print("Hello", "World", )
```

WANTED OUTPUT

```
Hello
World
```

FILL THE BLANK

104

```
print("Loading", )
print("done")
```

WANTED OUTPUT

Loading... done

FILL THE BLANK

105

```
print(1, 2, 3, )
print(4)
```

WANTED OUTPUT

1-2-3-4

FILL THE BLANK

106

```
h = 10
m = 45
print(h, m, )
```

WANTED OUTPUT

10:45

FILL THE BLANK

107

```
print("A", )
print("B", )
print("C")
```

WANTED OUTPUT

A B C

FILL THE BLANKS

108

```
x = 4
print(x, x * 2, x * 3, )
```

WANTED OUTPUT

4 | 8 | 12

FILL THE BLANK

109

```
price = 12.5
print("Rs", price * 2,     )
```

WANTED OUTPUT

Rs=25.0

FILL THE BLANK

110

```
print("Rs.", 499,     )
```

WANTED OUTPUT

Rs.499/-

FILL THE BLANK

Section J - Write a program

Write each program. Your program must print exactly what the sample run shows. In the sample run, **bold** text is what the user typed.

111

Ask for two whole numbers. Print the sum with **no spaces**, like the sample. Use `sep`.

SAMPLE RUN

```
First: 3
Second: 4
3+4=7
```

YOUR PROGRAM

112

Ask for a rectangle's length and breadth as decimal numbers. Print the area and the perimeter on **one line**, using **two** print statements. Use `end`.

SAMPLE RUN

```
Length: 2.5
Breadth: 4
Area = 10.0, Perimeter = 13.0
```

YOUR PROGRAM

113

Ask for a day, a month and a year as whole numbers. Print the date twice: once with slashes, once with dashes, year first. Use `sep`.

SAMPLE RUN

```
Day: 9
Month: 10
Year: 2026
9/10/2026
2026-10-9
```

YOUR PROGRAM

114

Ask for a number of seconds. Print it as hours, minutes and seconds. Use //, %, sep and end.

SAMPLE RUN

```
Seconds: 3725
3725 seconds = 1h 2m 5s
```

YOUR PROGRAM

115

Ask for a customer's name, an item price (decimal) and a quantity (whole number). Print a two-line bill like the sample.

SAMPLE RUN

```
Name: Aisha
Price: 12.5
Quantity: 3
Customer: Aisha
3 x 12.5 = 37.5
```

YOUR PROGRAM
