# Expressions in Python

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## What is an Expression in Python?

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- It produces a value when evaluated.
- Example: x = 10 + 5

- What will be the output of the following Python expressions?
  - 10 + 5 \* 2
  - $\bullet$  (10 + 5) \* 2
  - 10 / 3
  - 10 // 3

- What will be the output of the following Python expressions?
  - 10 + 5 \* 2
  - (10 + 5) \* 2
  - 10 / 3
  - 10 // 3
  - 2 \*\* 4

- 10 + 5 \* 2
- (10 + 5) \* 2
- 10 / 3
- 10 // 3
- 2 \*\* 4
- 15 % 4

- 10 + 5 \* 2
- $\bullet$  (10 + 5) \* 2
- 10 / 3
- 10 // 3
- 2 \*\* 4
- 15 % 4
- 5 + 3 \* 2 1

$$\bullet$$
 (10 + 5) \* 2

• Python follows PEMDAS order:

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  - E: Exponentiation
  - MD: Multiplication and Division (left to right)
  - AS: Addition and Subtraction (left to right)
- Floor division (//) rounds down to the nearest integer.

The following Python code evaluates each expression and prints the result:

• print(10 + 5 \* 2) # Output: 20

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```
• print(10 + 5 * 2) # Output: 20
```

• print((10 + 5) \* 2) # Output: 30

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- print((10 + 5) \* 2) # Output: 30
- print(10 / 3) # Output: 3.3333

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• print(10 + 5 * 2) # Output: 20
```

- print((10 + 5) \* 2) # Output: 30
- print(10 / 3) # Output: 3.3333
- print(10 // 3) # Output: 3

- print(10 + 5 \* 2) # Output: 20
- print((10 + 5) \* 2) # Output: 30
- print(10 / 3) # Output: 3.3333
- print(10 // 3) # Output: 3
- print(2 \*\* 4) # Output: 16

- print(10 + 5 \* 2) # Output: 20
- print((10 + 5) \* 2) # Output: 30
- print(10 / 3) # Output: 3.3333
- print(10 // 3) # Output: 3
- print(2 \*\* 4) # Output: 16
- print(15 % 4) # Output: 3

- print(10 + 5 \* 2) # Output: 20
- print((10 + 5) \* 2) # Output: 30
- print(10 / 3) # Output: 3.3333
- print(10 // 3) # Output: 3
- print(2 \*\* 4) # Output: 16
- print(15 % 4) # Output: 3
- print(5 + 3 \* 2 1) # Output: 10

- print(10 + 5 \* 2) # Output: 20
- print((10 + 5) \* 2) # Output: 30
- print(10 / 3) # Output: 3.3333
- print(10 // 3) # Output: 3
- print(2 \*\* 4) # Output: 16
- print(15 % 4) # Output: 3
- print(5 + 3 \* 2 1) # Output: 10
- print((8 3) \* 2) # Output: 10

- print(10 + 5 \* 2) # Output: 20
- print((10 + 5) \* 2) # Output: 30
- print(10 / 3) # Output: 3.3333
- print(10 // 3) # Output: 3
- print(2 \*\* 4) # Output: 16
- print(15 % 4) # Output: 3
- print(5 + 3 \* 2 1) # Output: 10
- print((8 3) \* 2) # Output: 10
- print(18 / 4) # Output: 4.5

- print(10 + 5 \* 2) # Output: 20
- print((10 + 5) \* 2) # Output: 30
- print(10 / 3) # Output: 3.3333
- print(10 // 3) # Output: 3
- print(2 \*\* 4) # Output: 16
- print(15 % 4) # Output: 3
- print(5 + 3 \* 2 1) # Output: 10
- print((8 3) \* 2) # Output: 10
- print(18 / 4) # Output: 4.5
- print(18 // 4) # Output: 4

- print(10 + 5 \* 2) # Output: 20
- print((10 + 5) \* 2) # Output: 30
- print(10 / 3) # Output: 3.3333
- print(10 // 3) # Output: 3
- print(2 \*\* 4) # Output: 16
- print(15 % 4) # Output: 3
- print(5 + 3 \* 2 1) # Output: 10
- print((8 3) \* 2) # Output: 10
- print(18 / 4) # Output: 4.5
- print(18 // 4) # Output: 4

# Summary

• Python expressions evaluate to a value.

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- Python expressions evaluate to a value.
- Operators follow precedence rules.

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- Python expressions evaluate to a value.
- Operators follow precedence rules.
- Expressions can be mathematical or string-based.

### Sources

• Python Documentation: https://docs.python.org/3/

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- Python Documentation: https://docs.python.org/3/
- Python Programming Notes

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