# Python Variables and Data Types: Beginner

**Ages 13–18 · Computing**

Name _____ Class _____ Date _____

## A Key terms: match each term to its meaning

Write the letter of the correct meaning in the box next to each term.

| | | | |
|---|---|---|---|
| 1 | **Variable** | ☐ | **A** Cannot be changed in place after creation, like an int, str or tuple. |
| 2 | **Data type** | ☐ | **B** Turning a value into another type with functions such as int(), float() and str(). |
| 3 | **Dynamic typing** | ☐ | **C** A reserved word such as class, if or for that cannot be used as a variable name. |
| 4 | **Keyword** | ☐ | **D** The type belongs to the value, so the same name can refer to values of different types over time. |
| 5 | **Mutable** | ☐ | **E** The kind of a value, such as int, float or str, which decides what you can do with it. |
| 6 | **Immutable** | ☐ | **F** Can be changed after it is created, like a list, dict or set. |
| 7 | **Type conversion** | ☐ | **G** A name that refers to a value, created when you first assign to it. |

## B Quick quiz

Circle the best answer, write its letter, then explain your choice in a few words.

**1 Which symbol assigns a value to a variable in Python?**

**a)** = **b)** ==
**c)** : **d)** ->

Answer: _____ Why? _____

**2 What does type(3.0) show?**

**a)** <class 'int'> **b)** <class 'str'>
**c)** <class 'float'> **d)** <class 'bool'>

Answer: _____ Why? _____

**3 Which of these variable names is invalid in Python?**

**a)** user_age **b)** _score
**c)** totalCount **d)** 1st_prize

Answer: _____ Why? _____

**4 What does '10' + '5' evaluate to?**

**a)** 15 **b)** '105'
**c)** '15' **d)** An error

Answer: _____ Why? _____

**5 Which of these types is mutable (can be changed in place)?**

**a)** tuple **b)** str
**c)** list **d)** int

Answer: _____ Why? _____

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Answer key for teachers · Ages 13–18 · Computing

## A Key terms

| | | | |
|---|---|---|---|
| 1 | **Variable** | G | A name that refers to a value, created when you first assign to it. |
| 2 | **Data type** | E | The kind of a value, such as int, float or str, which decides what you can do with it. |
| 3 | **Dynamic typing** | D | The type belongs to the value, so the same name can refer to values of different types over time. |
| 4 | **Keyword** | C | A reserved word such as class, if or for that cannot be used as a variable name. |
| 5 | **Mutable** | F | Can be changed after it is created, like a list, dict or set. |
| 6 | **Immutable** | A | Cannot be changed in place after creation, like an int, str or tuple. |
| 7 | **Type conversion** | B | Turning a value into another type with functions such as int(), float() and str(). |

## B Quick quiz

**1** **a) =**

A single = assigns the value on the right to the name on the left. == compares two values for equality.

**2** **c) <class 'float'>**

3.0 has a decimal point, so it is a float, even though its value is a whole number.

**3** **d) 1st_prize**

Names cannot start with a digit, so 1st_prize gives a SyntaxError. The others are valid, although PEP 8 prefers snake_case such as total_count.

**4** **b) '105'**

Both values are strings, so + joins them into the string '105'. To add them as numbers, convert first: int('10') + int('5') gives 15.

**5** **c) list**

Lists can be changed after creation, for example with append(). Tuples, strings and ints are immutable.