



# Homework – Solutions

## Task 1

Read the Python program below:

```
1 num1 = int(input())
2 num2 = 10 + num1 * 2
3 print(num2)
4 num1 = 20
5 print(num1)
```

### Question 1

When this program is executed, if the user types **10** on the keyboard, what will be displayed on the screen as a result of executing **line 3**?

- A. 30
- B. 40
- C.  $10 + 10 * 2$
- D.  $10 + \text{num1} * 2$

**The correct answer is A: 30.**

Operator precedence is important for the calculation (answer B). Expressions are **evaluated** during execution, and it's their value that is stored in variables (answers C and D).

### Question 2

When this program is executed, if the user types **10** on the keyboard, what will be displayed on the screen as a result of executing **line 5**?

- A. 10
- B. 20
- C. 10 and 20

D. There is an error in the program because a variable cannot hold two values at the same time

**The correct answer is B: 20.**

Line 4 **replaces** the value of `num1` (answer A); it does not assign it an additional value (answer D). Variables can only hold a single value at any given time (answer C).

## Task 2

**Rearrange** the lines in the Python program below, so that you have a runnable program that holds a meaningful interaction with the user.

```
1 print("And where do you live", name)
2 print("I've never been to", location)
3 name = input()
4 print("What is your name?")
5 location = input()
```

Write your rearranged program below:

```
4 print("What is your name?")
3 name = input()
1 print("And where do you live", name)
5 location = input()
2 print("I've never been to", location)
```

## Task 3

The **incomplete** program below is supposed to prompt the user for a distance in miles, and convert the distance that the user enters to kilometres.

```
1 print("Enter a distance in miles:")
2 miles = float(input()) # int is also correct
3 kilometres = 1.60934 * miles
4 print(miles, "miles is", kilometres, "km")
```

### Step 1

**Complete** line 2 so that the value assigned to the `miles` variable is obtained from what the user types on the keyboard.

## Step 2

**Complete** line 3 so that the program calculates the value of the `kilometres` variable to be the equivalent of the `miles` variable, converted to kilometres. Note that 1 mile is equal to 1.60934 kilometres.

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