

# Targets

I can:

- take competency tests (write Python by hand)

# Python Competency tests

Competency tests are writing code by hand. Yes, you need to use pencil (or pen) and paper. No compiler except your own brain. They ought to take each person about 15-20 minutes to finish. They are used to test your ability to think through code without the help of a compiler. And they test specific concepts. You only need to write the code snippets necessary to complete the tasks.

# Python Competency tests

CT – Variables, Constants, and Division

Demonstrate your competence in using the math operators by creating a short code segment for each of the following scenarios, and give example numbers and answers:

1. You have three numbers called `n1`, `n2`, and `n3` and you want to determine the remainders of the division of each of the numbers by 7. Give three example numbers (at least one number must be less than 7) and the answers of all 3 remainders (modulus operation). (Put the answers in comments after the divisions.) (Some example numbers: `n1 = 3`, `n2 = 11`, `n3 = 19`)

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Demonstrate your competence in using the math operators by creating a short code segment for each of the following scenarios, and give example numbers and answers:

2. You have three numbers called `n1`, `n2`, and `n3` and you want to determine the value of each divided by the other. Give three example numbers and the answers of all 6 divisions. (Put the answers in comments after the divisions.) (Some example numbers: `n1 = 3`, `n2 = 11`, `n3 = 19`)

# Python Competency tests

CT – Variables, Constants, and Division

Demonstrate your competence in using the math operators by creating a short code segment for each of the following scenarios, and give example numbers and answers:

3. You have two numbers called n1 and n2 and you want to determine what each divided by the other will be. You want to make sure that when you divide by n2, you get a float answer (a number with a decimal) and when you divide by n1, you get an int answer (a number without a decimal). Give two example numbers and answers to both divisions. (Put the answers in comments after the divisions.) Make sure that the float has a decimal value not equal to zero (i.e. 3.2 not 3.0). (Some example numbers: n1 = 3.7, n2 = 8)

# Python Competency tests

CT — Variables, Constants, and Division

Demonstrate your competence in using the math operators by creating a short code segment for each of the following scenarios, and give example numbers and answers:

4. You have two numbers called `n1` and `n2` and you want to determine what each divided by the other will be (but the opposite of the previous question). You want to make sure that when you divide by `n1`, you get a float answer (a number with a decimal) and when you divide by `n2`, you get an int answer (a number without a decimal). Use the same two example numbers as above and give answers to both divisions. (Put the answers in comments after the divisions.) Make sure that the float has a decimal value not equal to zero (i.e. 3.2 not 3.0). (Some example numbers: `n1 = 3.7`, `n2 = 8`)

# Python Competency tests

```
# Problem 1
n1 = 3
n2 = 11
n3 = 19

print("modulus")
answer = n1 % 7      # 3
print(answer)
answer = n2 % 7      # 4
print(answer)

# Problem 2
print("6 divisions")
answer = int(n1 / n2)  # 0
print(answer)
answer = n1 // n3     # floor division 0
print(answer)
answer = n2 // n1     # 3
print(answer)
answer = n2 // n3     # 0
print(answer)

# Problem 3
print("mixed division")
n1 = 3.7
n2 = 8

answer = n1 / n2      # 0.4625
print(answer)
answer = int(n2) // n1  # 2
print(answer)
```