Data Science with Python
Ticket Out the Door
Set 7: Conditionals Part 1

Name _____ Period _____

Skill 7.1 Exercise 1

For each of the following indicate what is printed as the output. If an error occurs, indicate the error and why.

Code	Output
num = 5 if (num < 10): print("Num is smaller than 10") print("This statement will always be executed")	
a = 7 b = 0 if (a > b): print("a is greater than b")	
a = 0 b = 7 if (b > a): print("b is greater than a")	
passing_score = 60 my_score = 67 if(my_score >= passing_score): print("Congratulations! You passed!")	
passing_score = 60 my_score = 57 if(my_Score >= passing_Score): print("You passed!") print("Congratulations!")	

Skill 7.2 Exercise 1

Write a program that accepts two words from a user and assigns them to variables *word1* and *word2*, respectively. Write an *if* statement that compares the words. If *word1* is greater than *word2*, swap the values stored in word1 and word2.

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Skill 7.2 Exercise 2

The ticket prices at a movie theater are given below.

Type of ticket	Price (in dollars)
Regular	12
Child (ages 12 and below)	9
Senior (ages 65 and above)	9

*Additional $5 fee for 3D movie

A programmer is creating an algorithm to set the value of *ticket_price* based on the information in the table. The programmer uses the integer variable *age* for the age of the moviegoer. The Boolean variable *is3D* is true when the movie is 3D and false otherwise.

Write an algorithm that correctly sets the value of ticket_price.

Skill 7.3 Exercise 1

For each of the following indicate what is printed as the output. If an error occurs, indicate the error and why.

Code	Output

num = 5
if(num > 10):
  print(“number is greater than 10”)
else:
  print(“number is less than 10”)
 	
print (“This statement will always be executed”)	

a = 7
b = 0
if (a > b):
  print(“a is greater than b”)
else:
  print(“b is greater than a”)	

a = 7
b = 0
if (a < b):
  print(“a is smaller than b”)
else:
  print(“b is smaller than a”)	

Data Science with Python
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Set 7: Conditionals Part 1

Name _____ Period _____

`passing_Score = 60`
`my_Score = 67`
`if(my_Score >= passing_Score):`
`print(“Congratulations!”)`
`print("You passed!")`
`else:`
`print(“You failed!”)`
`print(“Better luck next time!”)`	

`passing_Score = 60`
`my_Score = 57`
`if(my_Score >= passing_Score):`
`print(“Congratulations!”)`
`print("You passed!")`
`else:`
`print(“You failed!”)`
`print(“Better luck next time!”)`	

Skill 7.4 Exercise 1
Below is the start of a program. Write an if-else statement that checks whether someone is old enough to drive. If they are 16 or older, indicate to the user that they are old enough to drive. Otherwise, indicate to the user how long they need to wait until they can drive.
`age = input(“How old are you?)`

Data Science with Python
Ticket Out the Door
Set 7: Conditionals Part 1

Name _____ Period _____

Skill 7.4 Exercise 2

Once upon a time there was a land – a land of milk and honey, inhabited by happy and prosperous people. The people paid taxes, of course – their happiness had limits. The most important tax, called the *Personal Income Tax* (*PIT* for short) had to be paid once a year, and was evaluated using the following rule:

- If the citizen's income was not higher than 85,528 thalers, the tax was equal to 18% of the income minus 556 thalers and 2 cents (this was what they called *tax relief*)
- If the income was higher than this amount, the tax was equal to 14,839 thalers and 2 cents, plus 32% of the surplus over 85,528 thalers.

Your task is to write a **tax calculator**.

- It should accept one floating-point value: the income.
- Next, it should print the calculated tax, rounded to full thalers. There's a built in Python function named **round()** which will do the rounding for you.

Note: this happy country never returned any money to its citizens. If the calculated tax was less than zero, it would only mean no tax at all (the tax was equal to zero). Take this into consideration during your calculations.