Activity – Boolean expressions, logical operators, and if statements

NAME:

1. Indicate whether each Boolean expression below evaluates to True or False. Let **n=10** and **k=20**. Test your answer in Thonny. For example, in Python you could write:

```
n = 10
k = 20
print( (n>10) and (k==20) )
```

   a. (n>10) and (k==20)

   b. (n==10) and (k==20)

   c. (n>10) or (k==20)

   d. not((n>10) and (k==20))

   e. (n>10) or (k==10 or k!=5)

   f. (not(n>10)) and (not(k==20))

   g. (n<20) or (k==20)

   h. (n>=10) and (k<=20)

2. Give a Boolean expression for each of the following. Determine if variable **num** is:
   a. greater than or equal to 0 and less than 100.

   b. less than 100 and greater than or equal to 0, or it is equal to 200.

   c. a strictly positive number but not larger than 150 (inclusive).

3. Consider these lines of code to answer the following questions. Test your answer in Thonny.

```
if x>5:
   print("A")
elif y<10:
   print("B")
elif x==10:
   print("C")
else:
   print("D")
```

   a. What prints out if initially x = 5 and y = 11?

   b. What prints out if initially x = 10 and y = 11?

   c. What prints out if initially x = 0 and y = 5?

   d. Is there any value of x or y that will print “C”?

4. What exactly do the following statements print in Thonny? (Don't forget to import random)
    a. print(random.random())

    b. print(random.random())

    c. print(random.random())

    d. Why are they different?

If you finish early

5. Write in python a function that takes three integers as parameters and returns the largest. Test your function by calling it with various inputs. Copy your function definition below.

6. A fruit company sells oranges for 32 cents per pound, plus $7.50 per order for shipping. If an order weighs more than 100 pounds, the shipping cost is reduced by $1.50. Write a function that will take the number of pounds as oranges as a parameter and returns the cost of the order. Test your function by calling it with various inputs. Copy your function definition below.

Each individual will turn in this document (either after class or bring to the next class meeting).