First and Last Name: _____

Identi-key: _____

Exam 1

Instructions

1. Wait until all students have an exam on their desk.
2. Put your name and Identi-key on each page.
3. Count and make sure you have 5 different pages!
4. If there is a box next to the question, put only the output of the program inside the box.
5. All code-related questions are based on Python version 2.7.x
6. Show *only* the output of the code inside the boxes provided when provided.
7. Follow CU-Boulder's Honor Code.

DO NOT start

until the instructor tells you to!

IMPORTANT: these are just sample questions. You are responsible for all material in lectures 1 – 9 and the three homework assignments. You will not be tested on material specifically from *Think Python*.

Questions

1. [9 points] Circle True or False for each of the following:
   a. True or False: If you multiply an integer by a float in Python, the answer will be an integer.
   b. True or False: All values read in from the user are read in as strings.
   c. True or False: An *infinite loop* is when a loop continues to execute the statements inside the loop until the user types "quit" which causes the loop the stop. A little ambiguous. You can stop an infinite loop in many ways. So forget this one as long as you understand what an infinite loop is.

2. [8 points] Convert each of the following (non-Python) expressions into Python expressions:

   a. $a + 3b$ ➔ a + 3 * b

   b. $a \neq 2$ and $a \geq b$ ➔ a != 2 and a >= b

3. [9 points] What do the following expressions evaluate to?

   a. `26 % 7` evaluates to: 5

   b. `7 / 26` evaluates to: 0

   c. `2 + 3 * 4` evaluates to: 14

4. [10 points] What does the following code print?

```
score = 10
if  score < 10:
    print ("NOW")
    if  score > 2:
        print ("RIGHT")
    elif  score == 10:
        print ("CHEER")
else:
    print ("TIME")
print ("GREAT")
```

TIME
GREAT

5. [6 points] Write the code to prompt the user for their name, and store the result in a variable named 'name'.

name = input("Please enter your name: ")

OR

name = raw_input("Please enter your name: ")

6. [5 points] Convert the following **for** loop into a **while** loop:

```
for i in range(10):
    print (i)
```

```
counter = 0
while(counter < 10):
  print(counter)
  counter = counter + 1
```

7. [6 points] Write a loop that prints out the final sum of the numbers between 1 and 30 including the 1 and 30. *If you are not sure how to code it, then write the algorithm for it for partial credit.*

```
sum = 0

for i in range(31):

    sum = sum + 1

print(sum)
```

8. [15 points] What does the following code print? Use the underscore _ to designate spaces.

```
result = 5
print(result)
print("Result is %d: " % result)
sport = "kayaking"
print(sport + sport)
print ("one" + 2)
print ("three", "four")
```

5
Result is 5:
kayakingkayaking
error message
('three', 'four')

9. [9 points] What is the output from the following code?

```
number = 3
while number < 30:
    number = number * 4
    print (number)
print (number)
```

12
48
48

10. [5 points] Write out the code to print whether a number stored in a variable named 'number' is even or odd (divisible by 2). Assume that the variable named 'number' has already been assigned a numerical value.

```
if (number % 2 == 0):
  print("Number is even.")
elif (number % 2 == 1):
  print("Number is odd.")
```

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11. [10 points] Write the code to find the maximum value between three variables. The three variables are named 'x', 'y', and 'z'. Assume these three variables have already been assigned a number. Print out the highest value. You must make use of an if statement.
If you are not sure how to code it, then write the algorithm for it for partial credit.

```
if (x > y and x > z):
   print("x is the max")

elif (y > x and y > z):
   print("y is the max")

elif (z > x and z > y):
   print("z is the max")

else:
   print("Something strange happened.")
```

The reason I put the last line in is because the program won't catch the situation where x, y, and z are not strictly greater than one another. In other words, if two or three of the values are equal, you won't get a max, which makes sense.