Phys320 Homework 3

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1. A. 32 – python converts each number to binary, adds them together, and then when it is printed it is displayed as a decimal number

b. false because 0b110 is 6 -- prints nothing

c. true because they both equal 6 – prints 2

d. false because 0b1110 is 14 and 0o14 is 12 – prints nothing

e. same as above

2. from math import \*

pie=acos(-1.0)

print("To %d digits the value of pi is about %7.4lf\n" % (5, pie))

3. print("To %d digits the value of pi is about %.10el\n" % (5, pie))

4. Precision goes out to 1\*10^(-7)

5. Yes because it is inherent to the way the numbers are stored.

6. huh? – 0.1 in decimal is easily represented with just a single place value because it is c/(n^k) of the base value n. In this case where c=1, n=10, and k=1. Trying to convert this to binary you will find that it must be represented with an infinitely long floating point number. Kind of like how one third is a repeating decimal in base 10 but would not repeat in ternary. Because repeating floating point numbers can not be represent with a finite number of bits, the number stored in the computer is not 0.1 but just slightly over 0.1. Thus adding them together results in a slight bit of extra

7.

8. t=”Escanaba in the Moonlight”

theIndex=t.find("the")

t2=t[:theIndex]+”da”+t[theIndex+len(“the”):]