**Name**

**Advanced Programming in Java**

**Lab Exercise 9/17/2024**

Reference: Lesson 14 in Blue Pelican Java

1. Convert 3C4Fhex to decimal.

2. Convert 100011bin to decimal.

3. Convert 637oct to decimal.

4. Is the following code legal? If not, why?

int v = 04923;

5. Is the following code legal? If not, why?

int w = 0xAAFF;

6. Convert 9A4Ehex to decimal.

7. Convert 1011011bin to decimal.

8. Convert 6437oct to decimal.

9. Write code that will store 5C3Bhex in the integer variable *a*.

10. Write code that will store 3365oct in the integer variable *k*.

11. Convert 478dec to binary.

12. Convert 5678dec to hex.

13. Convert 5678dec to octal.

14. Multiply 2C6hex times 3Fhex and give the answer in hex.

15. Add 3456oct and 745oct and give the answer in octal.

16. What is the decimal equivalent of Ahex?

17. What is the decimal equivalent of 8hex?

18. What is the base of the hex system?

19. How do you write 16dec in hex?

20. What is the base of the binary system?

21. Add these two binary numbers 1111000 and 1001110.

22. Add these two binary numbers:

1000001 and 1100001

23. Explain the following “joke”.

“There are only 10 types of people in the world…those who understand binary

and those who don’t.”

24. Suppose you have *String s* that represents a number that you know is expressed in a base given by *int b*. Write code that will convert this into an equivalent decimal based integer and store the result in *int i*.

25. Add 3FA6hex to E83Ahex and give the answer in hex.

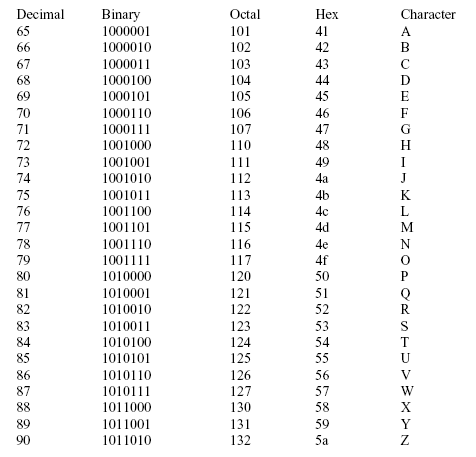
26. Multiply 7267oct times 4645oct and give the answer in octal.

27. Add 2376oct to 567oct and give the answer in octal.

28. Multiply 3Ehex times 5Bhex and give the answer in hex.

**Project… Basically Speaking**

Create a project called *TableOfBases*. The *main* method should have a *for* loop that cycles through the integer values 65 <= j <= 90 (These are the ASCII codes for characters A – Z). Use the methods learned in this lesson to produce a line of this table on each pass through the loop. Display the equivalent of the decimal number in the various bases just learned (binary, octal, and hex) as well as the character itself:



**When you have completed this project, submit your documented source code as well as this sheet with the questions answered.**