Homework #1

1. Assume that cost = 10 and price = 12. What is the value of each of the following expressions?

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| a. | price – cost \* 2 = 12 -10 \* 2 = -8 |  |  |
| b. | 15 + price – 3 \* 2 = 15 + 12- 3 \*2 = 21 |  |  |
| c. | (price + cost) \* 3 = (12 + 10) = 22 \* 3 = 66 |  |  |
| d. | 4 – 3 \* 2 + cost % price= 4-3\*2+10%12 =8 |  |  |
| e. | cost \* ((price % 3 – 8) + 5) + 100 = 10 \* ((12 % 3-8)+5)+100= 70 |  |  |

1. Convert the binary numbers to its equivalent in decimal (base 10), show your work.
2. 111, 4+2+1 = 7
3. 10110 ,
4. 01101100
5. Convert the decimal numbers to its equivalent in binary (base 2), show your work.
   1. 12
   2. 65
   3. 126
6. Convert the binary numbers to its equivalent in octal (base 8), show your work.
   1. 100010
   2. 101101111
   3. 10110
7. Convert the binary numbers to its equivalent in hexadecimal (base 16), show your work.
   1. 1000010
   2. 11101111
   3. 10110
8. Convert the following numbers to its equivalent in binary (base 2), show your work.
   1. F81H
   2. 7028
   3. 10110
9. Draw a flowchart or write pseudocode to represent the logic of a program that allows the user to enter a value for the radius of a circle. The program calculates the diameter by multiplying the radius by 2, and then calculates the circumference by multiplying the diameter by 3.14. The program outputs both the diameter and the circumference.
10. Draw a flowchart or write pseudocode to represent the logic of a program that allows the user to enter three values. The values represent hourly pay rate, the number of hours worked this pay period, and percentage of gross salary that is withheld. The program multiplies the hourly pay rate by the number of hours worked, giving the gross pay; then, it multiplies the gross pay by the withholding percentage, giving the withholding amount. Finally, it subtracts the withholding amount from the gross pay, giving the net pay after taxes. The program outputs the net pay.