Erin Ahern
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Homework 1

1)
Create Function ConvertToBinary(Number n):

       Boolean isNegative = false
       if(n < 0):
              set isNegative to True
              n = n * -1

       binaryList = new list
       While (n > 0):
              Append to binaryList (n % 2)
              n = n // 2

       Create new List finalValue;
       if(isNegative):
              Append "1" to finalValue
       Else
              Append "0" to finalValue

       Append to finalValue binaryList in reverse order
       Return finalValue

2)

	Positive Binary	Signed Binary	Two's Complement
0011	3	3	3
1101	13	-5	-3
1111	15	-7	-1
0110	6	6	6
1000	8	-0	-8

3)

Function YearsDepleted(Number X, Number Y, Number Z):

     Month = 0

     While X > 0:

          X = X*(1 + (Y/100)) - Z

          Month = Month + 1

     Return Month/12

Call YearsDepleted(20000, 0.8, 350)

Value returned by YearsDepleted(20000, 0.8, 350) is **6.4 years**

4)

4: Complete the following truth table   1 = True   0 = False

p	q	r	p OR q OR r	(p OR q) AND NOT r
0	0	0	False	False
0	0	1	True	False
0	1	0	True	True
0	1	1	True	False
1	0	0	True	True
1	0	1	True	False
1	1	0	True	True
1	1	1	True	False