Name _____ Per ___

Recursion Worksheet 1

1. Trace the following for Wow(64). What is the output? _____

```
void Wow (int n)
{
        if (n > 1)
                Wow (n / 2);
        System.out.print(n + " ");
}
```

2. Trace the following for 41, 31, and 22 and then explain what the function is doing. *Show each step using the tracing method shown in class for recursion.*

```
void Mystery(int n)
// precondition:        n ≥ 0
// postcondition:       Mystery???
{
    if (n < 2)
        System.out.print(n);
    else {
        Mystery(n/2);
        System.out.print(n % 2);
    }
}
```

3. Solve for F(F(2) + F(5))

```
int F(int x)
{
    if (1==x  ||  3==x)
            return x;
    else
            return x * F(x-1);
}
```

a) 62
b) 5! + 2!
c) (5! +2!)!
d) (7!)!
e) (62!)/(2!)

4. Evaluate F(6) given

F(x)	=	F(x-2) - 2*F((x-1)%3) + 1	when x is even and positive
	=	x + 1	when x is odd
	=	0	otherwise

Show work: Answer: _____