First Name Last Name

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Review: Recursion

1. What is the output?
Assume the function is called as shown below:

```
test(3)
```

A.
```
Algorithm test( n )
    print('A')
    if ( n )
        test(n - 1)
        print('Z')
    end if
end test
```

B.
```
Algorithm test( n )
    if ( n )
        print('A')
        test (n - 1)
        print('Z')
    end if
end test
```

C.
```
Algorithm test( n )
    if ( n )
        print('A')
        test(n - 1)
    end if
    print('Z')
end test
```

D.
```
Algorithm test( n )
    print('A')
    if ( n )
        test (n - 1)
    end if
    print('Z')
end test
```

E.
```
Algorithm test( n )
    if ( n )
        test(n - 1)
        print('A')
    end if
    print('Z')
end test
```

F.
```
Algorithm test( n )
    if ( n )
        test (n - 1)
        print('A')
        print('Z')
    end if
end test
```

Review: Recursion

2. What is the output?

```
int list[] = {10, 20, 30, 40};
int n = 4;

fun(list, n - 1);

/*******************************/
void fun(int *ptr, int n)
{
     if (n > 0)
     {
          cout << ptr[n] << " ";
          fun(ptr, n - 1);
     }
     cout << ptr[n] << " ";
}
```

3. This function calculates the first n terms in the series:

```
1 + 1/2 + 1/3 + 1/4 + ... + 1/n
```

It does not work: explain why and correct it!

```
/************************************************/
double fun(int n)
{
    if (n)
        return 1 + fun(1/n);
    return 0;
}
```