```matlab
function val = trapezoidal(f, a, b, n)
    h = (b-a)/n;
    sum = f(a) + f(b);
    for j=1:n-1
        sum = sum + 2*f(a + j*h);
    end
    val = sum * h/2;
end


function val = simpson(f, a, b, n)
    n = 2 * n;
    h = (b-a)/n;
    XI0 = f(a) + f(b);
    XI1 = 0;
    XI2 = 0;
    for i = 1:n-1
        X = a+i*h;
        if mod(i, 2) == 0
            XI2 = XI2 + f(X);
        else
            XI1 = XI1 + f(X);
        end
    end
    val = h * (XI0 + 2*XI2 + 4*XI1)/3;
end
```

```matlab
>> format long

>> f = @(x) x^3 * exp(x)


f =


  function_handle with value:


    @(x)x^3*exp(x)


>> trapezoidal(f, -2, 2, 4)


ans =


  31.365285650063754
```

```
>> simpson(f, -2, 2, 2)


ans =


  22.477125358234236
```