

2. Composite Trapezoidal Rule:

(Theorem 4.5)

```
function integral = comptrap(a,b,n,f)
h = (b-a)/n;
%Calculate the function values at, x1, x2, ..., x_n-1
x = [a+h:h:b-h];
%calculate the function values at those points
%then add them
%here it is in vector form
x1n=sum(feval(f,x));
integral = h/2*(feval(f,a)+2*x1n+feval(f,b));
end
```

Example 2.

```
>> f
f =
    @(x)x.^4
>> comptrap(0,2,8,f)
ans =
    6.566406250000000
>> g
g =
    @(x)sin(x)
>> comptrap(0,2,8,g)
ans =
    1.408763377234094
```