Trapezoidal Method Algorithm

1. Start
2. Define function f(x)
3. Read lower limit of integration, upper limit of
   integration and number of sub interval
4. Calcultae: step size = (upper limit - lower limit)/number of sub interval
5. Set: integration value = f(lower limit) + f(upper limit)
6. Set: i = 1
7. If i > number of sub interval then goto
8. Calculate: k = lower limit + i * h
9. Calculate: Integration value = Integration Value + 2* f(k)
10. Increment i by 1 i.e. i = i+1 and go to step 7
11. Calculate: Integration value = Integration value * step size/2
12. Display Integration value as required answer
13. Stop

Trapezoidal Method Pseudocode

1. Start
2. Define Function f(x)
3. Input lower_limt, upper_limit, sub_interval
4. Calculate: step_size = (lower_limit - upper_limit)/sub_interval
5. Calculate: integration = f(lower_limit) + f(upper_limit)
6. Set: i=1
7. Loop
       k= lower_limit + i * step_size
       integration = integration + 2*f(k)
       i = i+1
   While i<= sub_interval
8. integration = integration * step_size/2
9. Print intgertaion as result
10. Stop

Simpson's 1/3 Rule Algorithm

1. Start
2. Define function f(x)
3. Read lower limit of integration, upper limit of

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   integration and number of sub interval
4. Calcultae: step size = (upper limit - lower limit)/number of sub interval
5. Set: integration value = f(lower limit) + f(upper limit)
6. Set: i = 1
7. If i > number of sub interval then goto
8. Calculate: k = lower limit + i * h
9. If i mod 2 =0 then
     Integration value = Integration Value + 2* f(k)
   Otherwise
     Integration Value = Integration Value + 4 * f(k)
   End If
10. Increment i by 1 i.e. i = i+1 and go to step 7
11. Calculate: Integration value = Integration value * step size/3
12. Display Integration value as required answer
13. Stop
```

Simpson's 1/3 Rule Pseudocode

```
1. Start
2. Define Function f(x)
3. Input lower_limt, upper_limit, sub_interval
4. Calculate: step_size = (lower_limit - upper_limit)/sub_interval
5. Calculate: integration = f(lower_limit) + f(upper_limit)
6. Set: i=1
7. Loop
       k= lower_limit + i * step_size
       If i mod 2 = 0
             integration =  integration + 2 * f(k)
       Else
             integration =  integration + 4 * f(k)
       End If
       i = i+1
   While i<= sub_interval
8. integration = integration * step_size/3
9. Print intgertaion as result
10. Stop
```

Simpson's 3/8 Rule Algorithm

```
1. Start
2. Define function f(x)
3. Read lower limit of integration, upper limit of
   integration and number of sub interval
4. Calcultae: step size = (upper limit - lower limit)/number of sub interval
5. Set: integration value = f(lower limit) + f(upper limit)
6. Set: i = 1
```

```
7. If i > number of sub interval then goto
8. Calculate: k = lower limit + i * h
9. If i mod 3 =0 then
     Integration value = Integration Value + 2* f(k)
   Otherwise
     Integration Value = Integration Value + 3 * f(k)
   End If
10. Increment i by 1 i.e. i = i+1 and go to step 7
11. Calculate: Integration value = Integration value * step size*3/8
12. Display Integration value as required answer
13. Stop
```

Simpson's 3/8 Rule Pseudocode

```
1. Start
2. Define Function f(x)
3. Input lower_limt, upper_limit, sub_interval
4. Calculate: step_size = (lower_limit - upper_limit)/sub_interval
5. Calculate: integration = f(lower_limit) + f(upper_limit)
6. Set: i=1
7. Loop
       k= lower_limit + i * step_size
       If i mod 3 = 0
             integration =  integration + 2 * f(k)
       Else
             integration =  integration + 3 * f(k)
       End If
       i = i+1
   While i<= sub_interval
8. integration = integration * step_size*3/8
9. Print intgertaion as result
10. Stop
```