Practical 11

Trapezoid Rule

Q. Approximate the integral $\int_1^{2.2} \log(x)\, dx$, using Trapezoid Rule, with the number of intervals n = 1 and 12

```
TrapezoidRule[a0_, b0_, n_, f_] := Module[{a = a0, b = b0, h, ApproxIntegral},
   h = (b - a) / n;
   ApproxIntegral = h/2 (f[a] + f[b]) + h Sum[f[a + h k]; {k, 1, n - 1}]; Return[ApproxIntegral];];
f[x_] := Log[x];
TrapezoidRule[1, 2.2, 1, f]
```

```
0.473074
```

```
TrapezoidRule[1, 2.2, 12, f]
```

```
0.534152
```

```
actualvalue = Integrate[Log[x], {x, 1, 2.2}]
```

```
0.534606
```