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In[1]:= f[x_] := Sqrt[1 + Cos[x]^2]; m = 70;
it[f_, a_, b_, n_] := (h = (b - a) / n;
  cc = Join[{1}, Table[2, n - 1], {1}];
  yy = Table[f[a + i * h], {i, 0, n}];
  h / 2 * (cc.yy)
)
is[f_, a_, b_, n_] := (h = (b - a) / n;
  cc = Join[{1}, Table[{4, 2}, n / 2 - 1], {4, 1}] // Flatten;
  yy = Table[f[a + i * h], {i, 0, n}];
  h / 3 * (cc.yy)
)
job[f_, a_, b_] := (
  i0 = Integrate[f[x], {x, a, b}] // N;
  tt = Table[{n, Abs[it[f, a, b, n] - i0]}, {n, 2, m, 2}];
  ts = Table[{n, Abs[is[f, a, b, n] - i0]}, {n, 2, m, 2}];
  ListLogLogPlot[{tt, ts}, Joined -> True, PlotLegends -> {"trapezoid", "Simpson"}]
);
p1 = job[f, 0.0, Pi / 3]
p2 = job[f, 0.0, Pi / 2]
Show[p1, p2, PlotRange -> All]

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