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In[21]:= Quiet@Remove["Global`*"];
$HistoryLength = 2;
SetDirectory[NotebookDirectory[]];
proms = ToString /@ {Qout, T2, Pmechout, Qin, T4};

In[25]:= m1 = 1.5;
T1 = 400;
c1 = 1000;
c2 = c1;
Tout = 35.;
Δout = 10.;
ClearAll[vydej1];
vydej1[{kS_, m2_}] := Module[{rceSpolecne, T2, T3, T4, Pmechout, Qout,
    Δ1, Δ2, ηTD = 0.6, ηCarnot, Qin, rceLin, rceLog, dospoc, proms, sol},
    Δ1 = T1 - T4;
    Δ2 = T2 - T3;
    T3 = Tout + Δout;
    ηCarnot = 1 -  $\frac{Tout + 273}{T4 + 273}$ ;
    rceSpolecne = {Qin == m1 * c1 * (T1 - T2),
        Qin == m2 * c2 * (T4 - T3),
        Qin == Pmechout + Qout,
        Pmechout == ηCarnot * ηTD * Qin
    };
    rceLin = Union[rceSpolecne, {Qin == kS *  $\frac{\Delta1 + \Delta2}{2}$ }];
    rceLog = Union[rceSpolecne, {Qin == kS *  $\frac{\Delta1 - \Delta2}{\text{Log}[\frac{\Delta1}{\Delta2}]}$ }];
    dospoc = Solve[rceLin][[1]];
    proms = First /@ dospoc;
    sol = Chop[Quiet@FindRoot[rceLog, Thread[{proms, (proms /. dospoc)}]]];
    (*{Qout, T2, Pmechout, Qin, T4}*)
    proms /. sol
];

In[33]:= ClearAll[vydej2];
vydej2[{kS_, m2_}, {Aa_, Ab_}, {cPmech_, cQout_}] :=
Module[{Qout, T2, Pmechout, Qin, T4, CF},
    {Qout, T2, Pmechout, Qin, T4} = vydej1[{kS, m2}];
    CF = Pmechout * cPmech + Qout * cQout - (Aa + Ab * kS)
];

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In[35]:= ClearAll[vydej3];
Aa = 50;
Ab = 2;
cPmech = 1.5;
cQout = 0.1;
vydej3[{kS_?NumberQ, m2_?NumberQ}] := vydej2[{{kS, m2}, {Aa, Ab}, {cPmech, cQout}}];
vys = Quiet@FindMaximum[vydej3[{kS, m2}], {kS, 1300}, {m2, 1}];
myR := 0.01 Round[100 #] &;
vysledek = {Qout, T2, Pmechout, Qin, T4} = vydej1[{kS, m2} /. vys[[2]]];
(ToString[ #] <> "=" & /@proms)[[#]] <> (ToString /@ (myR /@ vysledek))[[#]] & /@
  Range[Length[proms]];
% * {"W", "°C", "W", "W", "°C"}
vys

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Out[45]= {Qout=352510. W, T2=63.39 °C, Pmechout=152405. W, Qin=504915. W, T4=346.81 °C}

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Out[46]= {232 990., {kS → 15 409.4, m2 → 1.67296}}

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