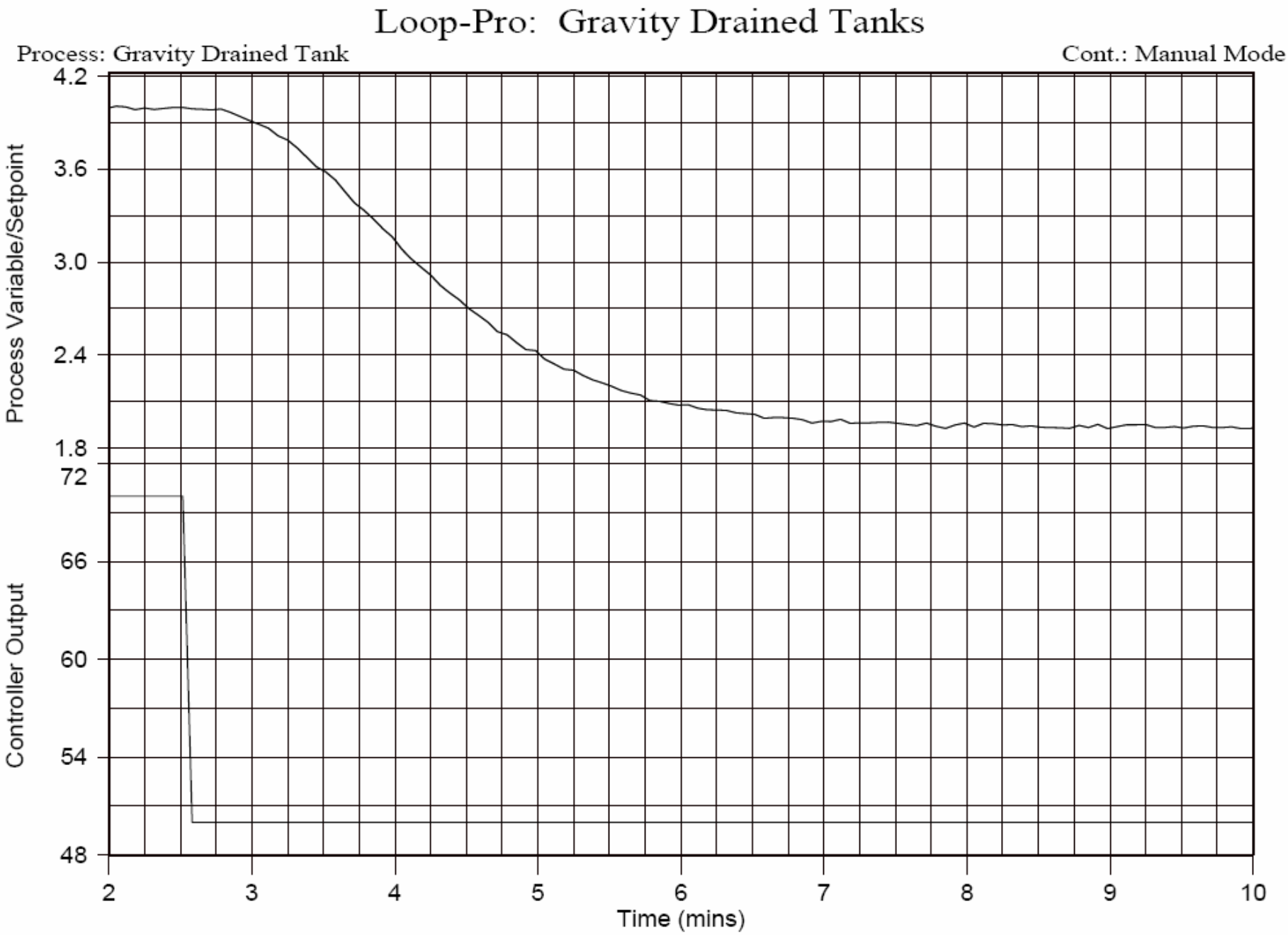
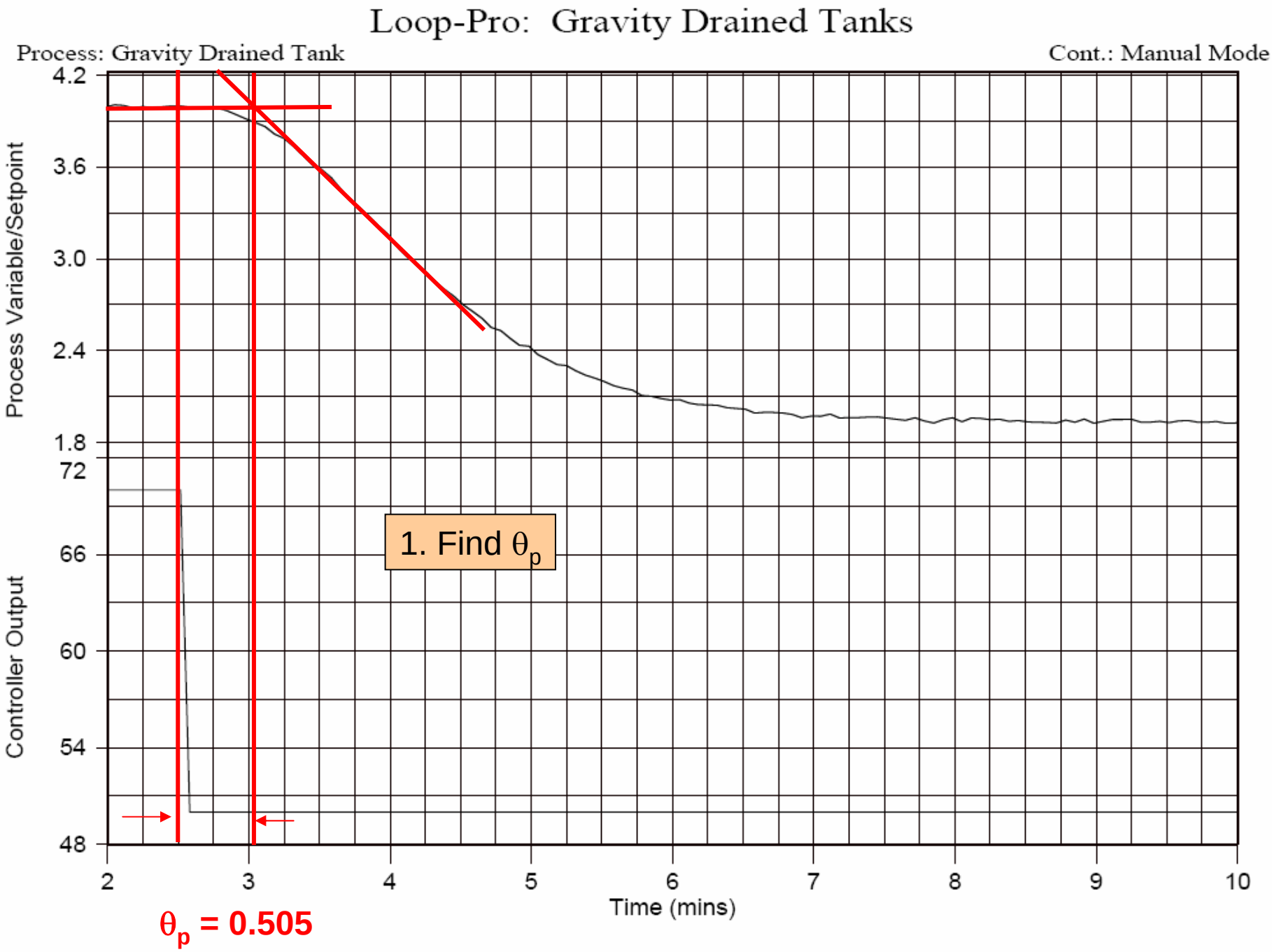
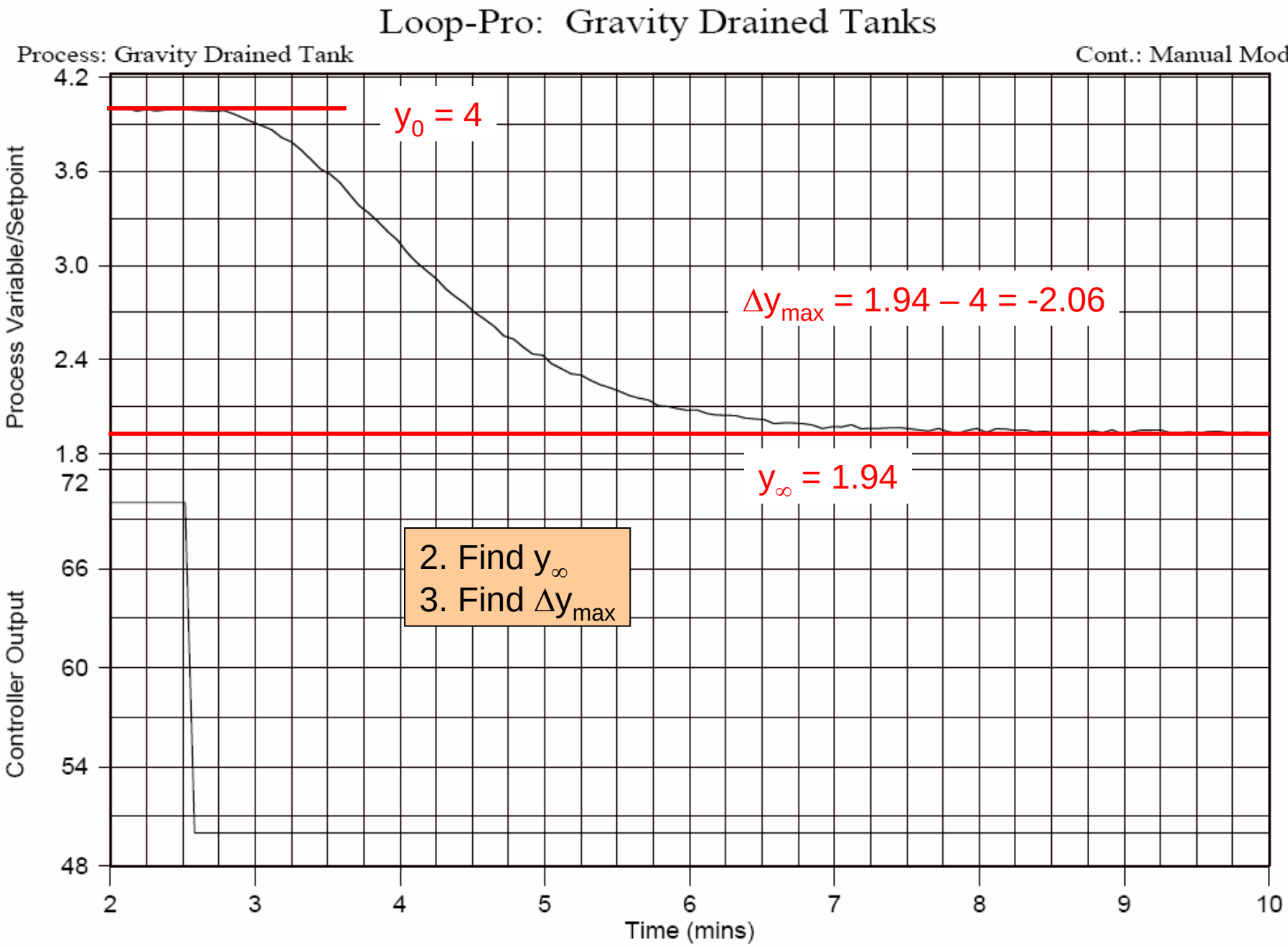
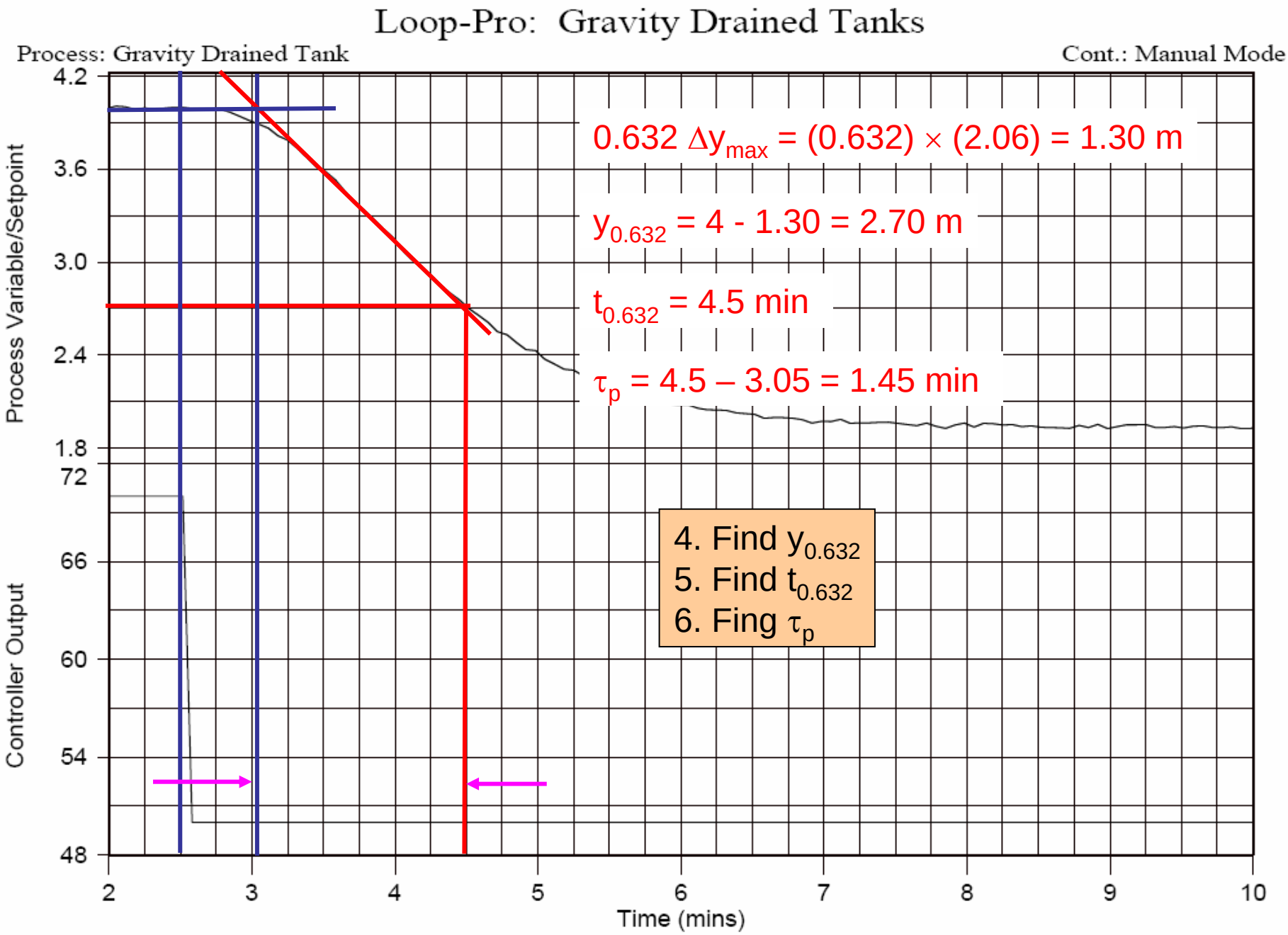
Manual Fitting (FOPDT)

1. Find θ_p
2. Find y_∞
3. Find Δy_{max}
4. Find $y_{0.632}$
5. Find $t_{0.632}$
6. Find τ_p
7. Find $K_p = \Delta y_{max} / \Delta u$


Loop-Pro: Gravity Drained Tanks
Process: Gravity Drained Tank
Cont.: Manual Mode
Process Variable/Setpoint
4.2
3.6
3.0
2.4
1.8
Controller Output
72
66
60
54
48
2
3
4
5
6
7
8
9
10
Time (mins)


Loop-Pro: Gravity Drained Tanks
Process: Gravity Drained Tank
Cont.: Manual Mode
Process Variable/Setpoint
4.2
3.6
3.0
2.4
1.8
72
66
60
54
48
Controller Output
1. Find θp
2
3
4
5
6
7
8
9
10
Time (mins)
θp = 0.505


Loop-Pro: Gravity Drained Tanks
Process: Gravity Drained Tank
Cont.: Manual Mode
Process Variable/Setpoint
Controller Output
Time (mins)
4.2
3.6
3.0
2.4
1.8
72
66
60
54
48
2
3
4
5
6
7
8
9
10
$y_0 = 4$
$\Delta y_{max} = 1.94 - 4 = -2.06$
$y_\infty = 1.94$
2. Find y_∞
3. Find Δy_{max}



Caution: Account for dead time when calculating τ_p!

7. Find K_p

- $K_p = \Delta y_{max} / \Delta u = -2.06$ m/-15%

  $= 0.137$ m/%