Tests for identical tasks

In[1]:=
```
(*tasks={1,2,3,4};*)
ps = {0.05, 0.05, 0.05, 0.05, 0.05, 0.05};
times = {5, 5, 5, 5, 5, 5};
Fstart = 0.2;
μ = 0.02;
λ = 2;
```

Tot time depending on rest position

In[ ]:=
```
τ = 5;
For[restAt = 0, restAt ≤ Length[ps], restAt++, totTime = 0;
 F = Fstart;
 Print["| ", restAt];
 FatigueLevel = For[i = 1, i ≤ Length[ps], i++,
   If[i == restAt, Print["  (", F E^-μ τ, ")"]];
   If[i == restAt, {F = F E^-μ τ + (1 - E^-ps[[i]] times[[i]] (1+λ Log[1+F E^-μ τ])) (1 - F E^-μ τ),
     totTime += times[[i]] (1 + λ Log[1 + F E^-μ τ]) + τ},
    {F = F + (1 - E^-ps[[i]] times[[i]] (1+λ Log[1+F])) (1 - F), totTime += times[[i]] (1 + λ Log[1 + F ])}];
   Print[F];];
 Print[" --> ", totTime, " |"]]
```

```
| 0
0.431244
0.62975
0.774129
0.867933
0.924744
0.957754
 --> 63.717 |
| 1
  (0.180967)
0.41304
0.615446
0.764366
```

```
0.861844
0.921146
0.955693
 --> 68.1017 |
| 2
0.431244
  (0.390206)
0.597218
0.751793
0.853951
0.916463
0.953005
 --> 67.8839 |
| 3
0.431244
0.62975
  (0.569821)
0.732607
0.841793
0.909211
0.948828
 --> 67.8019 |
| 4
0.431244
0.62975
0.774129
  (0.700461)
0.821105
0.896758
0.941618
 --> 67.7954 |
| 5
0.431244
0.62975
0.774129
```

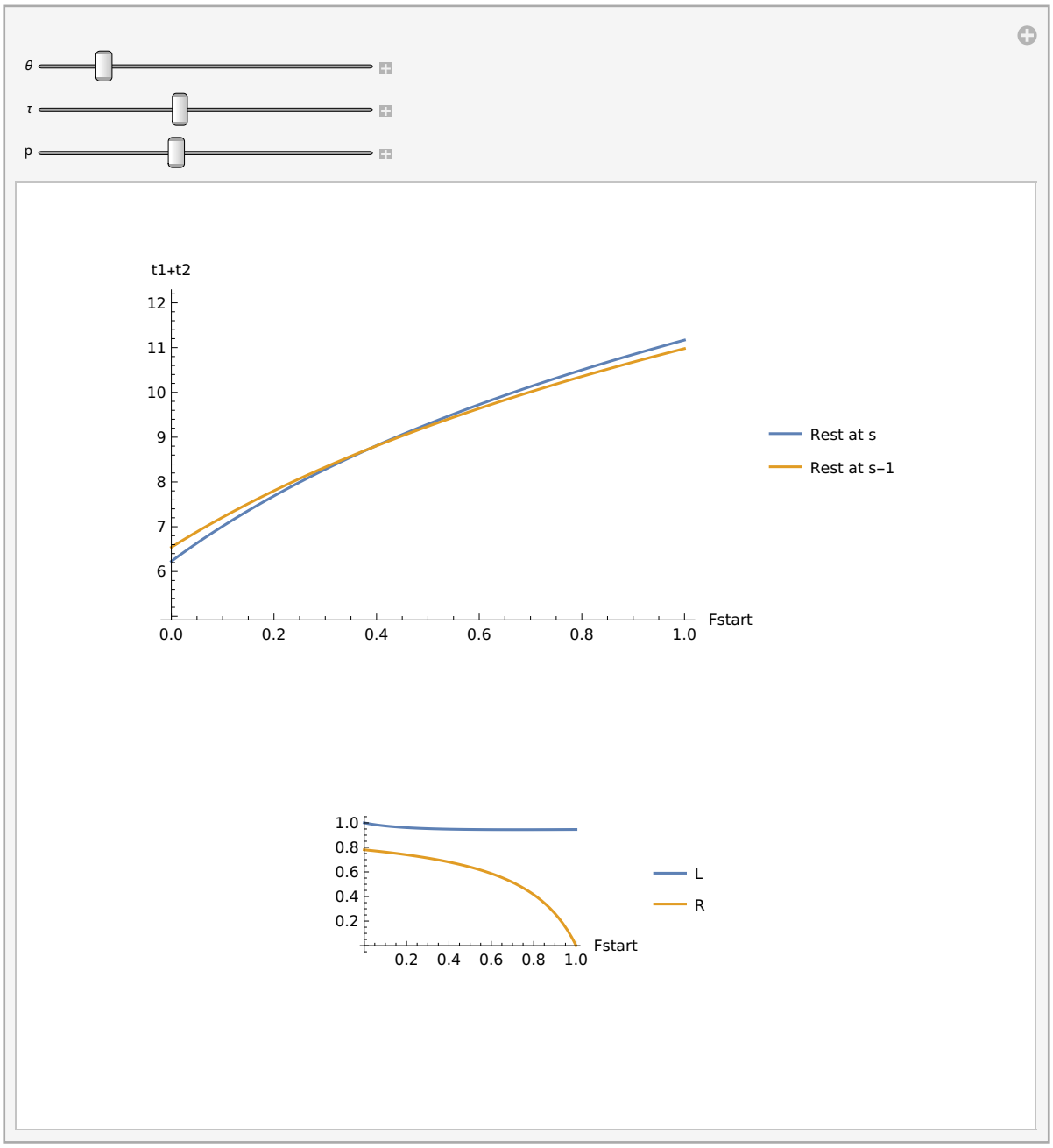
```
0.867933

  (0.785338)

0.874882

0.928836

 --> 67.8515 |

| 6

0.431244

0.62975

0.774129

0.867933

0.924744

  (0.836743)

0.906185

 --> 67.9871 |
```

Only two tasks

In[6]:=
```
F[t_, R_, p_] := R + (1 - E^(-p t)) (1 - R)

R[F_, τ_, μ_] := F E^(-μ τ)

g1[θth_, λ_, F_] := θth (1 + λ Log[1 + F])
```

In[9]:=
```
Manipulate[
 GraphicsColumn[{
   Plot[{g1[θ, λ, Fstart] + g1[θ, λ, R[F[g1[θ, λ, Fstart], Fstart, p], τ, μ]],
     g1[θ, λ, R[Fstart, τ, μ]] + g1[θ, λ, F[g1[θ, λ, R[Fstart, τ, μ]], R[Fstart, τ, μ], p]]}
    , {Fstart, 0, 1}, PlotLegends → {"Rest at s", "Rest at s-1"}, AxesLabel →
     {Automatic, "t1+t2"}, PlotRange → {Full, {2 * θ, 5 * θ}}, ImageSize → Medium],

   Plot[{(E^(p θ) - (1 + Fstart E^(-μ τ))^(-p θ λ))/(E^(p θ) - (1 + Fstart)^(-p θ λ)),
     (1 - Fstart)/(e^(μ τ) - Fstart)}, {Fstart, 0, 1},
    PlotLegends → {"L", "R"}, AxesLabel → {Automatic}, PlotRange → All]
  }, ImageSize → Large],
 {{θ, 10}, 0, 15},
 {{τ, 5}, 0, 30},
 {{p, 0.1}, 0, 0.5}]
```

Out[9]=


θ
τ
p
t1+t2
12
11
10
9
8
7
6
0.0
0.2
0.4
0.6
0.8
1.0
Fstart
Rest at s
Rest at s−1
1.0
0.8
0.6
0.4
0.2
0.2
0.4
0.6
0.8
1.0
Fstart
L
R