

Exercícios

Cap. 2 — Notas apoio 0607

<< Graphics`Legend`

■ Exercício 2.13

```
R[t_] = 1 - (1 - Exp[-2 t] (1 - (1 - Exp[-t])^2)) (1 - Exp[-t]);
Simplify[%]
```

```
N[∫0+∞ R[t] dt, 5]
```

```
N[2 ∫0+∞ t R[t] dt, 5]
% - %%^2
```

$$e^{-5t} (1 - 3e^t + 2e^{2t} + e^{4t})$$

1.1167

2.1494

0.9025

■ Exercício 2.14

$$R[t_] = \left(1 - \frac{t}{10}\right)^3;$$

```
N[∫010 R[t] dt, 5]
```

```
N[2 ∫010 t R[t] dt, 5]
% - %%^2
```

$$\frac{\sqrt{3.75}}{2.5}$$

```
N[ $\frac{\sqrt{\frac{25}{3}}}{5}$ , 5]
```

2.5000

10.000

3.750

0.774597

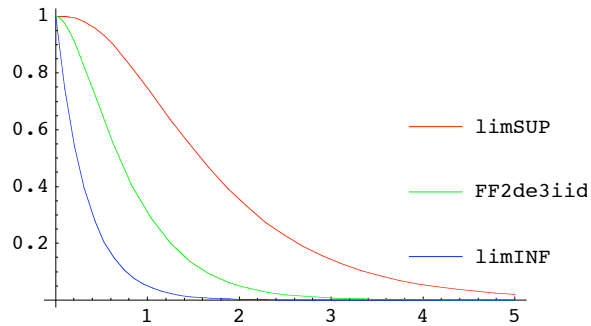
0.57735

■ Exercício 2.21

```

λ = 1;
Plot[{1 - (1 - Exp[-λ t])3, Exp[-2 λ t] (3 - 2 Exp[-λ t]), Exp[-3 λ t]},
{t, 0, 5}, PlotLegend → {"limSUP", "FF2de3iid", "limINF"},
PlotStyle → {RGBColor[1, 0, 0], RGBColor[0, 1, 0], RGBColor[0, 0, 1]},
LegendPosition → {.5, -.5}, LegendShadow → None]

```



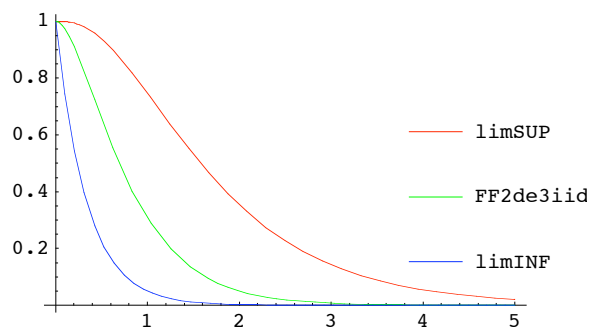
- Graphics -

■ Exercício 2.23

```

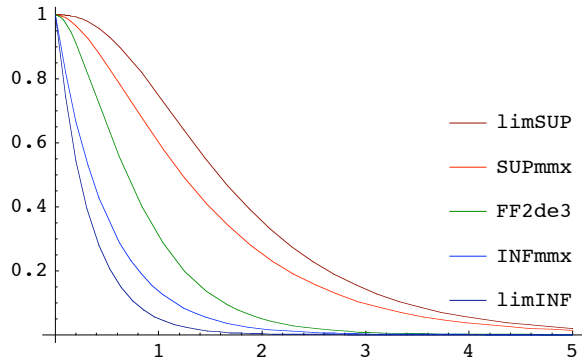
λ = 1;
Plot[{1 - (1 - Exp[-λ t])3, Exp[-2 λ t] (3 - 2 Exp[-λ t]), Exp[-3 λ t]},
{t, 0, 5}, PlotLegend → {"limSUP", "FF2de3iid", "limINF"},
PlotStyle → {RGBColor[1, 0, 0], RGBColor[0, 1, 0], RGBColor[0, 0, 1]},
LegendPosition → {.5, -.5}, LegendShadow → None]

```



- Graphics -

```
Plot[{1 - (1 - Exp[-λ t])3, Exp[-λ t] (2 - Exp[-λ t]),  
Exp[-2 λ t] (3 - 2 Exp[-λ t]), Exp[-2 λ t], Exp[-3 λ t]}, {t, 0, 5},  
PlotLegend → {"limSUP", "SUPmxx", "FF2de3", "INFmxx", "limINF"},  
PlotStyle → {RGBColor[.5, 0, 0], RGBColor[1, 0, 0],  
RGBColor[0, .5, 0], RGBColor[0, 0, 1], RGBColor[0, 0, .5]},  
LegendPosition → {.5, -.5}, LegendShadow → None]
```



- Graphics -