Cap. 2

Exercício 2.13

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

$$N\left[\int_0^{+\infty} R[t]\, dt,\ 5\right]$$

$$N\left[2\int_0^{+\infty} t\, R[t]\, dt,\ 5\right]$$

$$\% - \%\%^2$$

$$e^{-5t}\left(1 - 3\, e^{t} + 2\, e^{2t} + e^{4t}\right)$$

1.1167

2.1494

0.9025

Exercício 2.14

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

$$N\left[\int_0^{10} R[t]\, dt,\ 5\right]$$

$$N\left[2\int_0^{10} t\, R[t]\, dt,\ 5\right]$$

$$\% - \%\%^2$$

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

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

2.5000

10.000

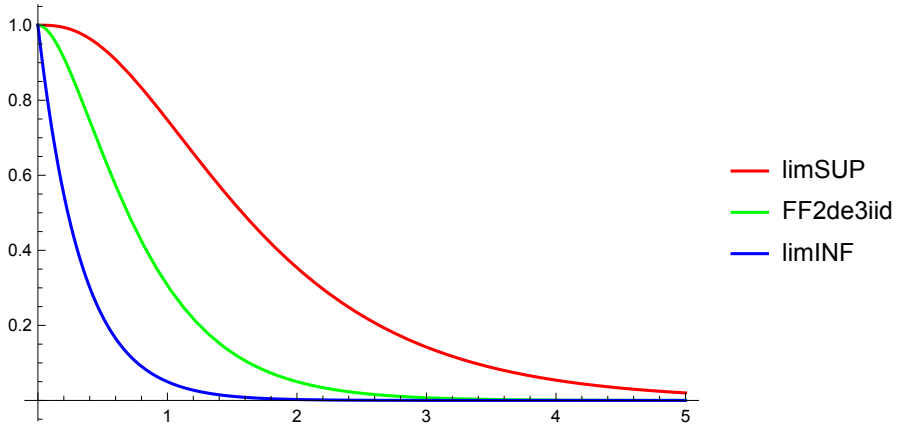
3.750

0.774597

0.57735

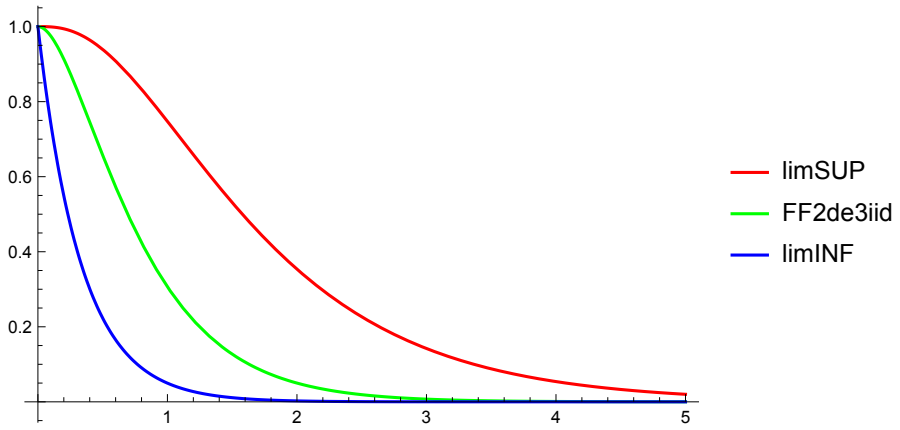
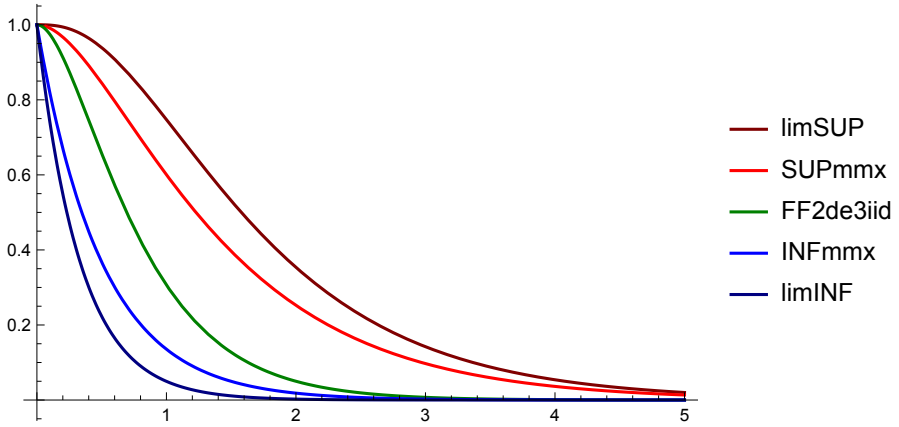
Exercício 2.21

```
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}, PlotLegends → Placed[{"limSUP", "FF2de3iid", "limINF"}, Right],
 PlotStyle → {RGBColor[1, 0, 0], RGBColor[0, 1, 0], RGBColor[0, 0, 1]}]
```



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}, PlotLegends → Placed[{"limSUP", "FF2de3iid", "limINF"}, Right],
 PlotStyle → {RGBColor[1, 0, 0], RGBColor[0, 1, 0], RGBColor[0, 0, 1]}]
```



```
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}, PlotLegends →
  Placed[{"limSUP", "SUPmmx", "FF2de3iid", "INFmmx", "limINF"}, Right],
 PlotStyle → {RGBColor[.5, 0, 0], RGBColor[1, 0, 0],
   RGBColor[0, .5, 0], RGBColor[0, 0, 1], RGBColor[0, 0, .5]}]
```