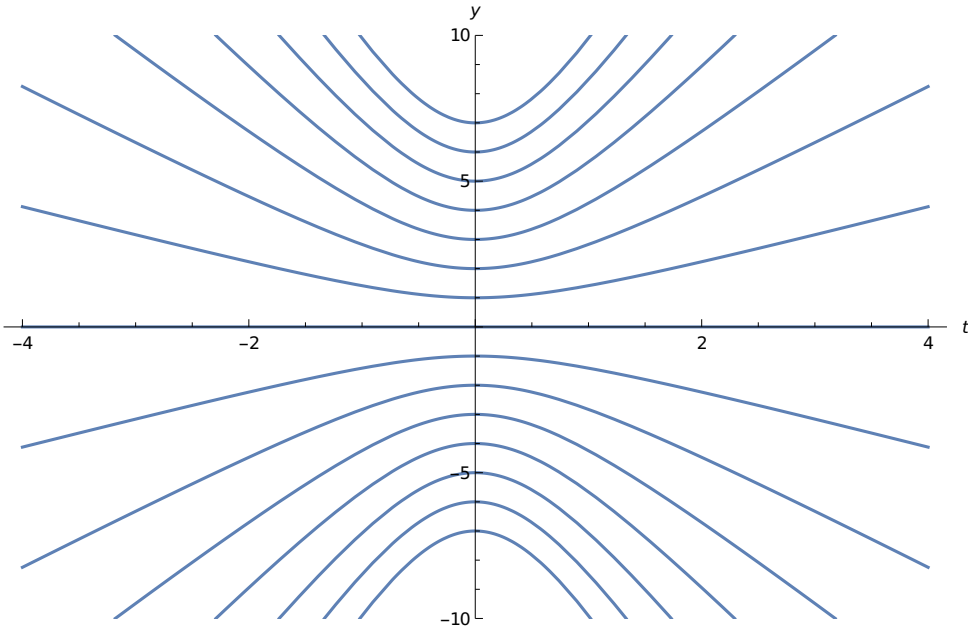
Equazione inziale : $y' = \frac{t}{t^2+1} y$

```
solution = DSolve[y'[t] == t/(t^2 + 1) * y[t], y[t], t]
```

$$\{\{y[t] \to \sqrt{1+t^2}\, c_1\}\}$$

```
f[t_] = y[t] /. solution[[1]]
F[t_] = Table[f[t] /. c1 → j, {j, -7, 7}]
Plot[F[t], {t, -4, 4}, AxesLabel → {t, y}, PlotRange → {-10, 10}]
```



Condizione data : $y(0) = 2$

```
cauchy = DSolve[{y'[t] == t/(t^2 + 1) * y[t], y[0] == 2}, y[t], t]
```

$$\{\{y[t] \to 2\sqrt{1+t^2}\}\}$$

```
g[t_] = y[t] /. cauchy[[1]]
```

```
Plot[g[t], {t, -4, 4}, AxesLabel → {t, y}, PlotRange → {-10, 10}]
```