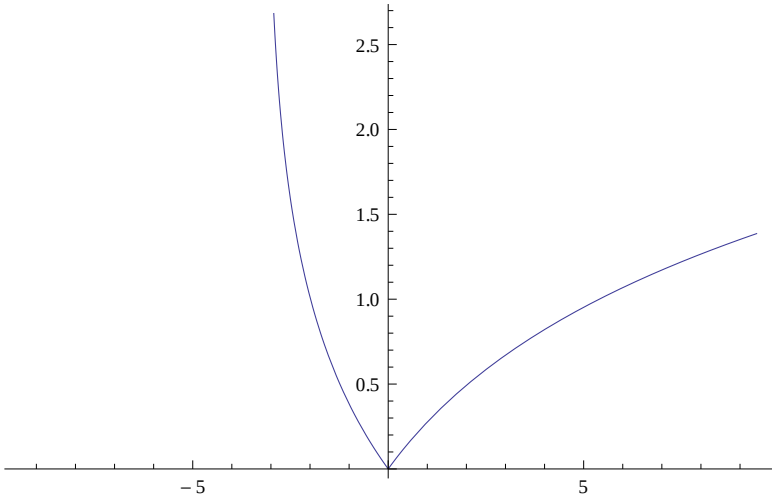
```
Integrate[Sign[G] / (G + π), {G, -π, t}]
```

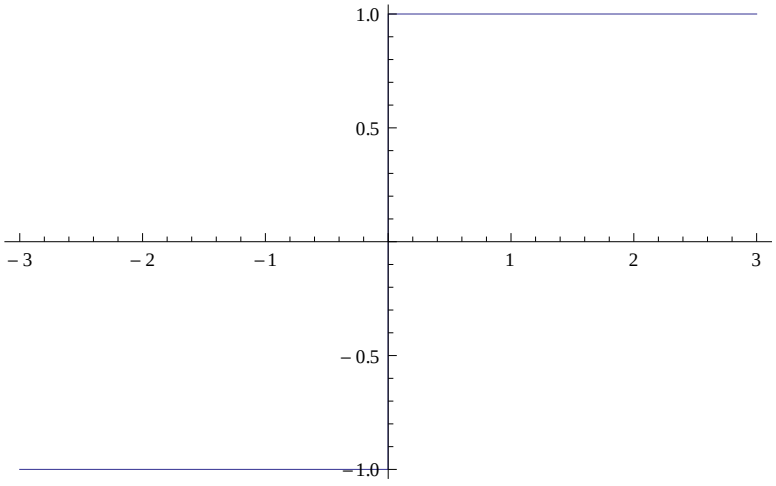
$$\text{If}\left[t \in \text{Reals}, \ (-1 + 2\ \text{HeavisideTheta}[t])\ \text{Log}\left[\frac{\pi + t}{\pi}\right], \ \text{Integrate}\left[\frac{\text{Sign}[G]}{G + \pi}, \{G, -\pi, t\}, \text{Assumptions} \to t \notin \text{Reals}\right]\right]$$

```
g[t_] := (-1 + 2 HeavisideTheta[t]) Log[(π + t)/π]
```

```
Plot[g[t], {t, -3 π, 3 π} ]
```




```
Plot[-1 + 2 HeavisideTheta[t], {t, -3, 3}]
```




```
D[g[t], t]
```

$$\frac{-1 + 2\ \text{HeavisideTheta}[t]}{\pi + t} + 2\ \text{DiracDelta}[t]\ \text{Log}\left[\frac{\pi + t}{\pi}\right]$$

```
D[(-1 + 2 HeavisideTheta[t])/(π + t), t]
```

$$\frac{2\,\text{DiracDelta}[t]}{\pi + t} - \frac{-1 + 2\,\text{HeavisideTheta}[t]}{(\pi + t)^2}$$

```
D[ HeavisideTheta[t], t]
```

```
DiracDelta[t]
```