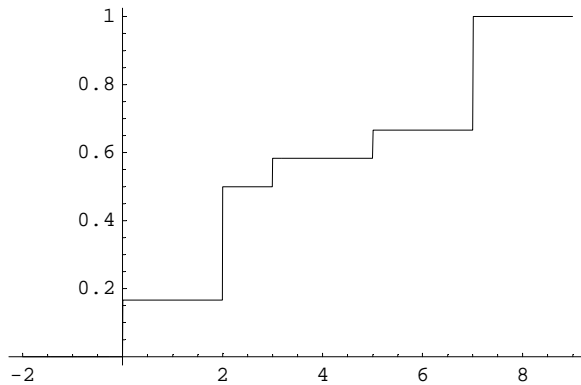# Treppenfunktion

1

```
h[x_] := Sign[(Sign[x] + 1) / 2];
p[1] = 1 / 6; t[1] = 0;
p[2] = 1 / 3; t[2] = 2;
p[3] = 1 / 12; t[3] = 3;
p[4] = 1 / 12; t[4] = 5;
p[5] = 1 / 3; t[5] = 7;
F[x_] := Sum[p[k] h[x - t[k]], {k, 1, 5}]
```

```
F[x]
```

$$\frac{1}{3} \text{Sign}[1 + \text{Sign}[-7 + x]] + \frac{1}{12} \text{Sign}[1 + \text{Sign}[-5 + x]] +$$
$$\frac{1}{12} \text{Sign}[1 + \text{Sign}[-3 + x]] + \frac{1}{3} \text{Sign}[1 + \text{Sign}[-2 + x]] + \frac{1}{6} \text{Sign}[1 + \text{Sign}[x]]$$

```
Plot[F[x], {x, -2, 9}];
```



```
Table[{t[k], F[t[k]]}, {k, 1, 5}] // N // TableForm
```

```
0.      0.166667
2.      0.5
3.      0.583333
5.      0.666667
7.      1.
```