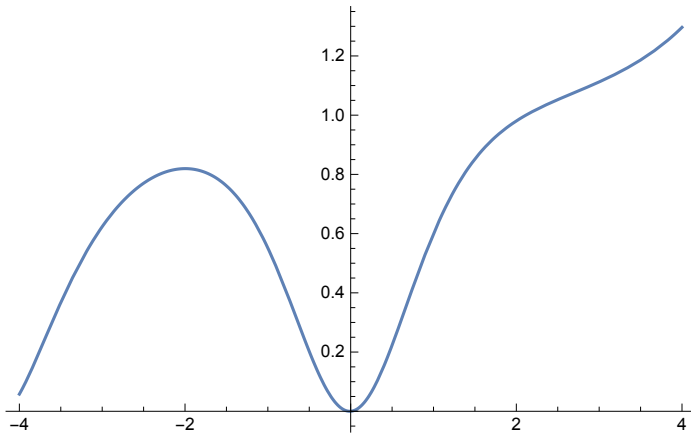


`Plot[(Cosh[x] (1/(x+10)^2) + Tanh[x])^2, {x, -4, 4}]`



`TeXForm[(Cosh[x] (1/(x+10)^2) + Tanh[x])^2]`

`\left(\frac{\cosh (x)}{(x+10)^2}+\tanh (x)\right)^2`

`pdf = (Cosh[x] (1/(x+10)^2) + Tanh[x])^2`
5.4

`0.185185 (Cosh[x]/(10+x)^2 + Tanh[x])^2`

`NIntegrate[pdf, {x, -4, 4}]`

0.998921

`m1s = NIntegrate[pdf * x, {x, -4, 4}]`

`m2s = NIntegrate[pdf (x)^2, {x, -4, 4}]`

`m3s = NIntegrate[pdf (x)^3, {x, -4, 4}]`

`m4s = NIntegrate[pdf (x)^4, {x, -4, 4}]`

`m5s = NIntegrate[pdf (x)^5, {x, -4, 4}]`

0.72669

6.35907

8.27867

59.6945

103.429

```

Cumulant2 = m2s - m1s2
Cumulant3 = 2 * m1s3 - 3 * m2s * m1s + m3s
Cumulant4 = -6 * m1s4 + 12 * m2s * m1s2 - 4 * m3s * m1s - 3 * m2s2 + m4s
Cumulant5 =
  24 * m1s5 - 60 * m2s * m1s3 + 20 * m3s * m1s2 + 30 * m2s2 * m1s - 5 * m4s * m1s - 10 * m2s * m3s + m5s
5.831
-4.81705
-47.0592
187.54

```

```

xt = m1s * t
sigmaxt = Sqrt[m2s * t +  $\frac{t(t-1)}{2}$  m1s2 - xt2]

```

```
0.72669 t
```

```
 $\sqrt{6.35907 t + 0.264039 (-1 + t) t - 0.528078 t^2}$ 
```

```
Plot[{xt, sigmaxt}, {t, 0, 10}]
```

