In[157]:=
```
Clear["Global`*"]
```

In[158]:=
```
(*Linear variation of fiber path angles for variable angle tow laminates*)
```

In[159]:=
```
θ = 2 * (T1 - T0) / L * x + T0
```

Out[159]= $T0 + \frac{2\,(-T0 + T1)\,x}{L}$

In[160]:=
```
y = Integrate[Tan[θ], x]
```

Out[160]= $\frac{L\,\mathrm{Log}\left[\mathrm{Cos}\left[T0 - \frac{2\,(T0-T1)\,x}{L}\right]\right]}{2\,(T0 - T1)}$

In[161]:=
```
parameters = {L → 0.3, T0 → π/3, T1 → π/6}
```

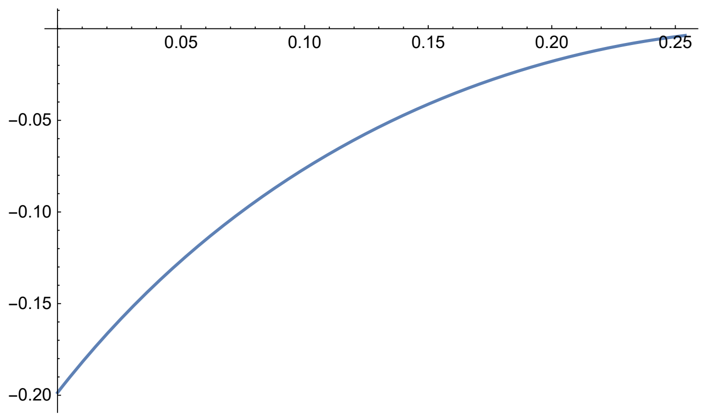
Out[161]= $\{L \to 0.3,\ T0 \to \frac{\pi}{3},\ T1 \to \frac{\pi}{6}\}$

In[162]:=
```
Fiberpath = y /. parameters
```

Out[162]= $0.286479\,\mathrm{Log}\left[\mathrm{Sin}\left[\frac{\pi}{6} + 3.49066\,x\right]\right]$

In[163]:=
```
Plot[Fiberpath, {x, 0, 0.254}]
```

Out[163]=



In[164]:=
```
D[Fiberpath, {x, 2}] /. x → 0
```

Out[164]= -13.9626

In[165]:=
```
D[Fiberpath, x]
```

Out[165]= $1.\,\mathrm{Cot}\left[\frac{\pi}{6} + 3.49066\,x\right]$

In[166]:= (*The traditional method is: $\kappa 1 = \frac{d^2y}{dx^2} \Big/ \left(1 + \left(\frac{dy}{dx}\right)^2\right)^{3/2}$ *)

In[167]:= $\kappa 1 =$ `D[Fiberpath, {x, 2}]` $/\left(1 + \texttt{D[Fiberpath, x]}^{\wedge}2\right)^{3/2}$ `/. x → 0`

Out[167]= -1.74533

In[168]:= (*The expression given in paper is: $\kappa 2 = \cos[\theta]\left(\frac{d\theta}{dx}\right)$ *)

In[169]:=
```
κ2 = Cos[θ] * D[θ, x] /. parameters /. x → 0
```
Out[169]=
```
-1.74533
```