

```
> kn :=

$$\frac{\int\left(\frac{2 \cdot M \cdot x}{L} \cdot \sin\left(\frac{n \cdot \text{Pi} \cdot x}{L}\right), x=0 \ldots \frac{L}{2}\right) + \int\left(\frac{2 \cdot M \cdot (L-x)}{L} \cdot \sin\left(\frac{n \cdot \text{Pi} \cdot x}{L}\right), x=\frac{L}{2} \ldots L\right)}{\int\left(\sin^2\left(\frac{n \cdot \text{Pi} \cdot x}{L}\right), x=0 \ldots L\right)} :$$

```

```
> simplify(kn) :
```

```
> kn := simplify(kn) :
```

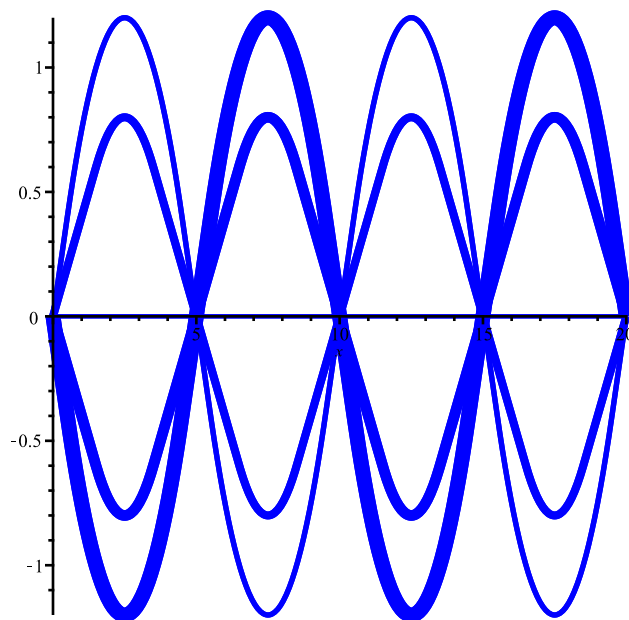
```
> an :=  $\frac{kn \cdot L}{c \cdot n \cdot \text{Pi}}$  :
```

```
> with(plots) :
```

```
> psum := subs( $M=1, L=5, c=1, \text{sum}\left(an \cdot \sin\left(\frac{n \cdot \text{Pi} \cdot x}{L}\right) \cdot \sin\left(\frac{c \cdot n \cdot \text{Pi} \cdot t}{L}\right), n=1 \ldots 100\right)$ ) :
```

```
> curves := [seq(subs( $t=2 \cdot m, psum$ ),  $m=0 \ldots 10$ )] :
```

```
> plot(curves,  $x=0 \ldots 20$ , thickness=[1, 2, 3, 4, 5.6], color=blue)
```



```
> animate(psum,  $x=0 \ldots 20, t=0 \ldots 10$ ) :
```

```
>
```