



Text Math Drawing Plot Animation

 Maple Input Courier New 12 **B** *I* U \int \sum \prod $\frac{1}{x}$ $\frac{1}{x^2}$ $\frac{1}{x^3}$

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> # Find Fourier cosine coefficients for
# f(x)=1 on L/2<x<L, f(x)=0 elsewhere
```

```
> L:=1;
```

$$L := 1 \quad (1)$$

```
> f:=x->piecewise(x<L/2,0, x<L,1,0);
```

$$f := x \rightarrow \text{piecewise}\left(x < \frac{1}{2}L, 0, x < L, 1, 0\right) \quad (2)$$

```
> convert(f(x),piecewise,x);
```

$$\begin{cases} 0 & x < \frac{1}{2} \\ 1 & x < 1 \\ 0 & 1 \leq x \end{cases} \quad (3)$$

```
> A:=n->(2/L)*int(f(x)*cos(n*Pi*x/L),x=0..L);
```

$$\left(\frac{2}{L} \int_0^L f(x) \cos\left(\frac{n\pi x}{L}\right) dx \right)$$