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> L:=1;
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$$L := 1 \tag{1}$$

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> f:=x->piecewise(x<L/2,0, x<L,1,0);
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$$f := x \rightarrow \text{piecewise}\left(x < \frac{1}{2}L, 0, x < L, 1, 0\right) \tag{2}$$

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> convert(f(x),piecewise,x);
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$$\begin{cases} 0 & x < \frac{1}{2} \\ 1 & x < 1 \\ 0 & 1 \leq x \end{cases} \tag{3}$$

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> A:=n->(2/L)*int(f(x)*cos(n*Pi*x/L),x=0..L);
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$$2 \left( \int_0^L f(x) \cos\left(\frac{n\pi x}{L}\right) dx \right)$$