Heat Equation for a Rod

```
> u:=(x,t)->(200/Pi)*sum(((1-(-1)^n)/n)*sin(n*Pi*x/10)*exp(-(n*
  Pi/10)^2*t),n=1..20);
```

$$u := (x, t) \rightarrow \dfrac{200 \left(\displaystyle\sum_{n=1}^{20} \dfrac{(1 - (-1)^n) \, \sin\left(\dfrac{1}{10} \, n \, \pi \, x\right) e^{-\frac{1}{100} n^2 \pi^2 t}}{n} \right)}{\pi} \tag{1}$$

```
> plot3d(u(x,t),x=0..10,t=0..20);
```