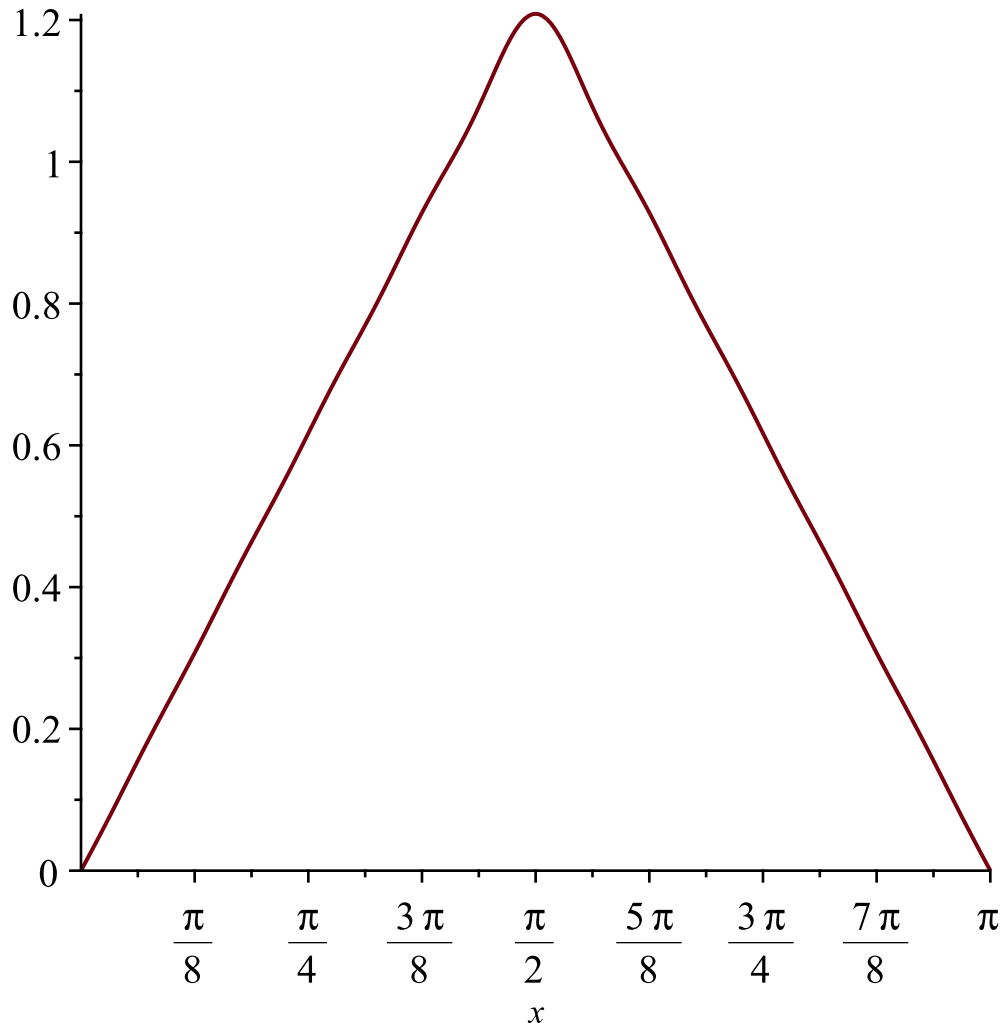


```
> with(plots):
> S := x -> sum( ((-1)^(n+1)/(2*n-1)^2)*sin((2*n-1)*x) , n=1..10);
```

$$S := x \mapsto \sum_{n=1}^{10} \frac{(-1)^{n+1} \sin((2n-1)x)}{(2n-1)^2}$$

```
> plot( S(x) , x=0..Pi);
```



```
> u := (x,t) -> sum( ((-1)^(n+1)/(2*n-1)^2)*sin((2*n-1)*x)*cos((2*
n-1)*t) , n=1..10);
```

$$u := (x,t) \mapsto \sum_{n=1}^{10} \frac{(-1)^{n+1} \sin((2n-1)x) \cos((2n-1)t)}{(2n-1)^2}$$

```
> animate( u(x,t) , x=0..Pi, t=0..2*Pi);
```

```
> animate3d( sin(2*x)*sin(2*y)*cos(2*t), x=0..Pi, y=0..Pi, t=0..2*
Pi);
```

```
> f := x -> sum( (1/(2*n+1)) * sin( (2*n+1)*x ) , n=0..5):
```

```
> plot( f(x) , x=-3*Pi..3*Pi );
```

```
> (2/Pi)*(int( x*sin(n*x), x=0..Pi/2) + int((Pi-x)*sin(n*x),x=
```

(Pi/2)..Pi));

$$\frac{2 \left(-\frac{n \cos\left(\frac{\pi n}{2}\right) \pi - 2 \sin\left(\frac{\pi n}{2}\right)}{2 n^2} + \frac{n \cos\left(\frac{\pi n}{2}\right) \pi - 2 \sin(\pi n) + 2 \sin\left(\frac{\pi n}{2}\right)}{2 n^2} \right)}{\pi}$$

(1)