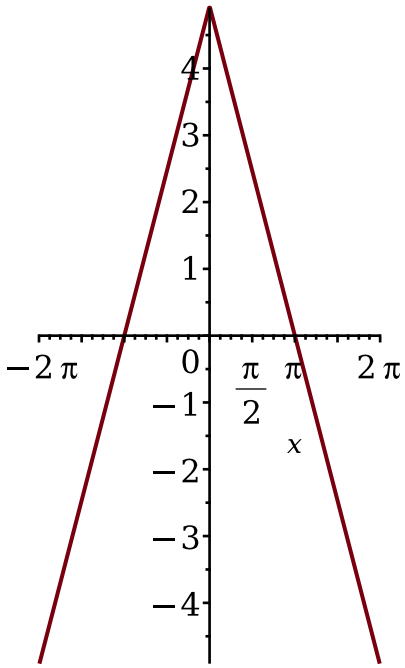
```
> restart:
```

```
> f := x→(π^2/2)·(1 − abs(x)/Pi):
```

```
> plot(f(x), x = −2·Pi..2·Pi)
```




```
> a := n→(1/(2·Pi))·int(f(x)·cos((n·x)/2), x = −2·Pi..2·Pi)
```

$$a := n \mapsto \frac{\int_{-2\cdot\pi}^{2\cdot\pi} f(x)\cdot\cos\left(\frac{n\cdot x}{2}\right)\,dx}{2\cdot\pi} \tag{1}$$

```
> a(0)
```

$$0 \tag{2}$$

```
> a(1)
```

$$4 \tag{3}$$

```
> a(2)
```

$$0 \tag{4}$$

```
> a(3)
```

$$\frac{4}{9} \tag{5}$$

```
> odd_a := simplify(a(2·n + 1) assuming (n, posint))
```

$$odd\_a := \frac{4}{(2n+1)^2} \tag{6}$$

```
> f_approx := evalf(add(odd_a · cos((n·x)/2), n = 0..1000)):
```

```
> simplify(subs(x = 0, f_approx))
```

$$4.933803198 \quad (7)$$

> $evalf\left(\frac{\pi^2}{2}\right)$

$$4.934802202 \quad (8)$$

>