

Demo of absolute convergence.

```
> a:=n->evalf(cos(n)/n^2);
```

$$a := n \rightarrow \text{evalf}\left(\frac{\cos(n)}{n^2}\right)$$

```
> a(1);
```

0.5403023059

```
> a(2);
```

-0.1040367091

```
> a(3);
```

-0.1099991663

```
> a(4);
```

-0.04085272631

```
> a(5);
```

0.01134648742

```
> a(6);
```

0.02667139685

```
> a(7);
```

0.01538576030

```
> a(8);
```

-0.002273438028

```
> a(9);
```

-0.01124852175

```
> s:=n->evalf(sum(a(k),k=1..n));
```

$$s := n \rightarrow \text{evalf}\left(\sum_{k=1}^n a(k)\right)$$

```
> s(1);
```

0.5403023059

```
> s(4);
```

0.2854137042

```
> s(7);
```

0.3388173487

```
> s(10);
```

0.3169046737

```
> s(50);
```

0.3242182077

> **s(100);**

0.3241326675

> **s(500);**

0.3241342753

Looks like series converging. What about its absolute values?

> **s:=n->evalf(sum(abs(a(k)),k=1..n));**

$$s := n \rightarrow \text{evalf}\left(\sum_{k=1}^n |a(k)|\right)$$

> **s(4);**

0.7951909076

> **s(7);**

0.8485945521

> **s(10);**

0.8705072271

> **s(50);**

0.9151160509

> **s(100);**

0.9213008205

> **s(500);**

0.9263704153

> **s(1000);**

0.9270054128

>