

## 1 First example

The well known Pythagorean theorem  $x^2 + y^2 = z^2$  was proved to be invalid for other exponents. Meaning the next equation has no integer solutions:

$$x^n + y^n = z^n$$

## 2 Second example

In physics, the mass-energy equivalence is stated by the equation  $E = mc^2$ , discovered in 1905 by Albert Einstein.

The mass-energy equivalence is described by the famous equation

$$E = mc^2$$

discovered in 1905 by Albert Einstein. In natural units ( $c = 1$ ), the formula expresses the identity

$$E = m \tag{1}$$

## 3 Third example

This is a simple math expression  $\sqrt{x^2 + 1}$  inside text. And this is also the same:  $\sqrt{x^2 + 1}$  but by using another command.

This is a simple math expression without numbering

$$\sqrt{x^2 + 1}$$

separated from text.

This is also the same:

$$\sqrt{x^2 + 1}$$

formula per la rappresentazione dell'energia di un segnale:

$$\int_{-\infty}^{\infty} |f(x)|^2$$

formula per la rappresentazione della potenza media di un segnale:

$$\int_{-\infty}^{\infty} |f(x)|^2$$

serie di fourier di un segnale:

$$\int_{-T}^T |f(x)e^{-j2\pi f}$$
$$\lim_{T \rightarrow \infty} \frac{1}{2T} \int_{-T}^T |x|^2 dx$$

$$\lim_{x \rightarrow \infty} f(x)$$

... and this:

$$\sqrt{x^2 + 1}$$