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:The mass-energy equivalence is described by the famous equation
$E = mc^2$
$E = m$

Maths Equations Problems

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

the formula of

$$(a+b)^2$$
$$a^2 + b^2 + 2ab = (a+b)^2 \tag{1}$$

$$(x+y)^2$$
$$x^2 + Y^2 + 2xy = (x+y)^2 \tag{2}$$

this is the 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

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

separates from text.
This is also the same:

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

QUESTION NUMBER THREE

$$f(x) = x^2$$
$$g(x) = \frac{1}{x}$$
$$F(x) = \int_b^a x^3$$

$$f(x) = ax^2 + bx + c \tag{3}$$

$$g(x) = dx^3 + ex^2 + fx + g \tag{4}$$

$$h(x) = \frac{1}{x} \tag{5}$$

$$j(x) = \int_0^e e^{-}t^2 dt \tag{6}$$

$$\begin{bmatrix} 1 & 2 & 3 \\ 1 & 2 & 3 \\ 1 & 2 & 3 \end{bmatrix}$$

Some mathematical symbols: α, β, $\sum_{i=1}^{n} x_i$, $\int_a^b f(x)\,dx$, $\lim_{x \to \infty} f(x)$.

@articlelamport1986latex, author = "Leslie Lamport", title = "LaTeX: A Document Preparation System", journal = "Addison-Wesley series in computer science", volume = "35", year = "1986", publisher = "Addison-Wesley"