Suppression of the symbolic evaluation of an expression

Write down the symbolic expression

$$k = x^2 + x \cdot y + y^2$$

Symbolically solve for y

$$k = x^2 + x \cdot y + y^2 \text{ solve}, y \rightarrow \begin{pmatrix} \frac{\sqrt{4 \cdot k - 3 \cdot x^2}}{2} - \frac{x}{2} \\ -\frac{x}{2} - \frac{\sqrt{4 \cdot k - 3 \cdot x^2}}{2} \end{pmatrix}$$

Define it to be equal to some arbitrary name (probably one you're going to use, though!)

$$g := k = x^2 + x \cdot y + y^2 \text{ solve}, y \rightarrow$$

I used g rather than g(k,x) just to raise an error, thereby suppressing the symbolic expansion

Delete the definition operator

$$g \square \left(k = x^2 + x \cdot y + y^2 \text{ solve}, y \rightarrow \right)$$

This wraps the symbolic solve expression in parentheses and inhibits the display of the symbolic solution

Restore the definition operator and complete the left hand side

$$g(k,x) := \left(k = x^2 + x \cdot y + y^2 \text{ solve}, y \rightarrow \right)$$

$$g(9,3) = \begin{pmatrix} 0 \\ -3 \end{pmatrix} \qquad g(64,2) = \begin{pmatrix} \sqrt{61} - 1 \\ -\sqrt{61} - 1 \end{pmatrix}$$

Here are another couple of examples:

cubic

$$h(k,x) := \left(k = x^3 + 2x \cdot y + y^2 \text{ solve}, y \rightarrow \right)$$

$$h(12,3) = \begin{pmatrix} -3 + \sqrt{6} \cdot i \\ -3 - \sqrt{6} \cdot i \end{pmatrix} \qquad h(63,4) = \begin{pmatrix} \sqrt{15} - 4 \\ -\sqrt{15} - 4 \end{pmatrix}$$

multinomial expansion

p just returns the symbolic expression

$$p(n) := (a + b + c)^n \rightarrow$$

$$p(3) \rightarrow (a + b + c)^3$$

q returns the expansion

$$q(n) := \left[(a + b + c)^n \text{ expand } \rightarrow \right]$$

$$q(0) \rightarrow 1$$

$$q(1) \rightarrow a + b + c$$

Note the difference between q2 and q

$$q2(n) := (a + b + c)^n \text{ expand } \rightarrow$$

$$q2(0) \rightarrow 1$$

$$q2(1) \rightarrow a + b + c$$

$q(2) \rightarrow a^2 + 2 \cdot a \cdot b + 2 \cdot a \cdot c + b^2 + 2 \cdot b \cdot c + c^2$

$q2(2) \rightarrow (a + b + c)^2$

$q(3) \rightarrow a^3 + 3 \cdot a^2 \cdot b + 3 \cdot a^2 \cdot c + 3 \cdot a \cdot b^2 + 6 \cdot a \cdot b \cdot c + 3 \cdot a \cdot c^2 + b^3 + 3 \cdot b^2 \cdot c + 3 \cdot b \cdot c^2 + c^3$

$q(4) \rightarrow a^4 + 4 \cdot a^3 \cdot b + 4 \cdot a^3 \cdot c + 6 \cdot a^2 \cdot b^2 + 12 \cdot a^2 \cdot b \cdot c + 6 \cdot a^2 \cdot c^2 + 4 \cdot a \cdot b^3 + 12 \cdot a \cdot b^2 \cdot c + 12 \cdot a \cdot b \cdot c^2 + 4 \cdot a \cdot c^3 + b^4 + 4 \cdot b^3 \cdot c + 6 \cdot b^2 \cdot$

$c^2 + 4 \cdot b \cdot c^3 + c^4$