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

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

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

$$g := k = x^2 + x \cdot y + y^2 \xrightarrow{solve, y} \begin{bmatrix} \frac{\sqrt{4 \cdot k - 3 \cdot x^2}}{2} - \frac{x}{2} \\ -\frac{x}{2} - \frac{\sqrt{4 \cdot k - 3 \cdot x^2}}{2} \end{bmatrix}$$

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

Delete the definition operator

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

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

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

$g(9, 3) = ?$ $g(64, 2) = ?$

Here are another couple of examples:

cubic

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

$h(12, 3) = ?$ $h(63, 4) = ?$

multinomial expansion

p just returns the symbolic expression

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

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

q returns the expansion

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

$q(0) \rightarrow q(0)$

$q(1) \rightarrow q(1)$

$q(2) \rightarrow q(2)$

$q(3) \rightarrow q(3)$

$q(4) \rightarrow q(4)$

Note the difference between q2 and q

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

$q2(0) \rightarrow 1$

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

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

Method 1:

Type whole definition, including symbolic evaluation

$r(n) := (a+b+c+d)^n \xrightarrow{expand} (a+b+c+d)^n$

delete definition operator

$r(n) \,\square\, \left[(a+b+c+d)^n \text{ expand } \rightarrow\right]$

replace definition operator

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

$r(2) \rightarrow (a+b+c+d)^2$

Method 2:

Type expression and symbolically evaluate

$(a+b+c+d)^n \xrightarrow{expand} (a+b+c+d)^n$

....

Write lhs of definition

$(a+b+c+d)^n \xrightarrow{expand} (a+b+c+d)^n$

$s(n) := \square$

....

Press ' to create pair of parentheses

$(a+b+c+d)^n \xrightarrow{expand} (a+b+c+d)^n$

$s(n) := (\square)$

....

Cut symbolic expression and paste into parentheses

Bring to boil, add sugar and evalute to taste ...

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

$s(2) \rightarrow s(2)$

Now this is interesting ...

$s(2) = ?$

"="?

$s(1) = ?$

$sf(n,a,b,c,d) := (s(n) \rightarrow \ )$

$sf(2,1,2,3,4) = ?$

$sf(2,1,2,3,4) \rightarrow sf(2,1,2,3,4)$

$sf(n,a,b,c,d) := s(n) \rightarrow s(n)$

$sf(2,1,2,3,4) = ?$

$sf(2,1,2,3,4) \rightarrow s(2)$