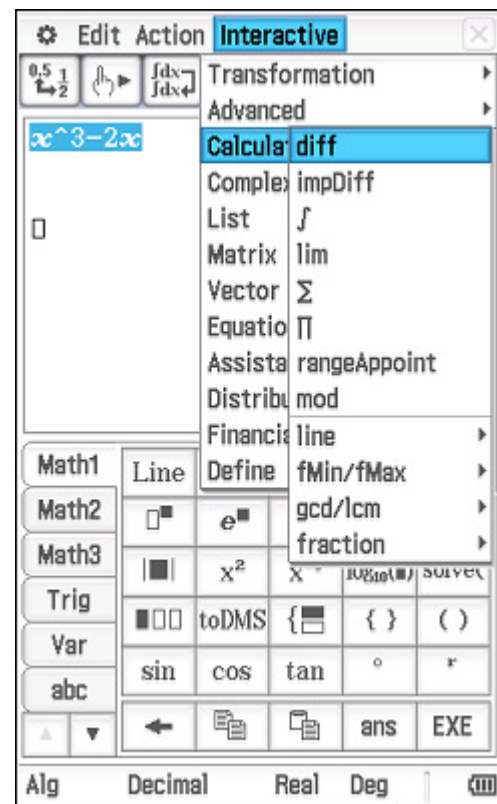


Start in the Main application.

Enter the expression $x^3 - 2x$ and drag the pen back across it to select.

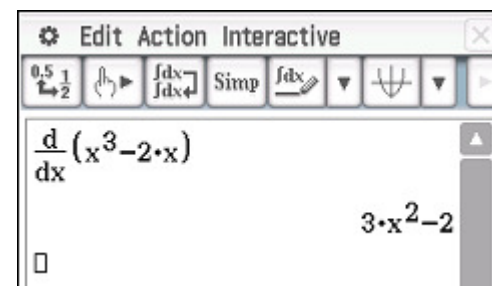
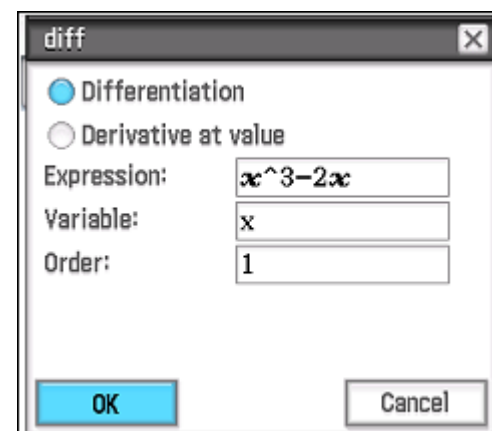
Tap **Interactive**, **Calculate**, **diff**.



The **diff** dialogue box opens.

For a first order derivative with respect to x , simply tap **OK**.

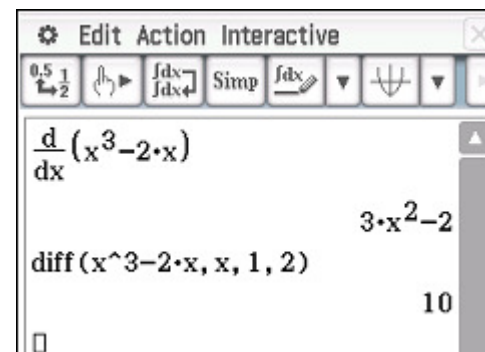
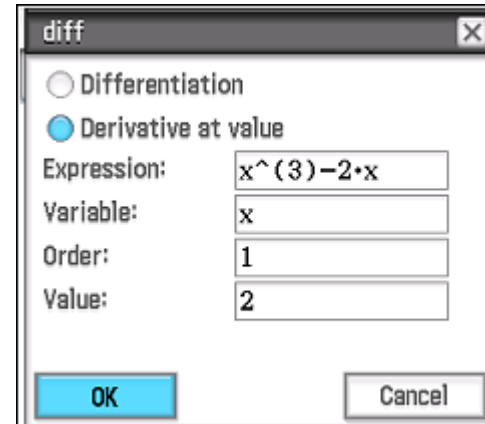
Classpad completes the syntax and returns the derivative.



Sometimes the value of the derivative for a given x -value is required.

When the **diff** dialogue box opens, tap on **Derivative at value**, enter the required value (eg 2) in the last line and tap **OK**.

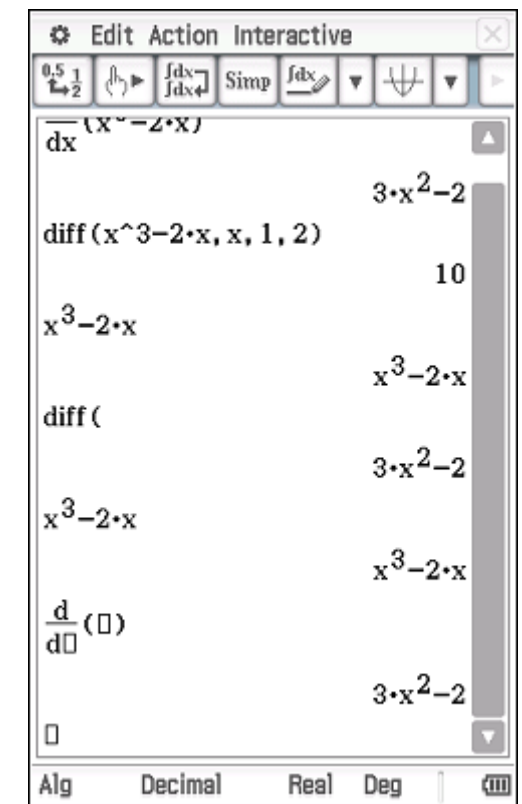
Classpad completes the syntax in a different way.



Shortcuts for first order derivatives with respect to x :

Enter the expression, tap **EXE**.

Enter $\frac{d}{dx}$ (or $\frac{d}{d\Box}$ on the next line (using shift keys, the action menu or the keyboard) and tap **EXE**.



Higher order derivatives can be calculated either using the **Interactive, Calculate, diff** method or using the template from the Math2 keyboard.

Derivatives can also be evaluated at a point as shown below.

Differentiation with respect to any variable is straightforward.

The screenshot shows the 'Edit Action Interactive' window. The top toolbar includes buttons for $\frac{0.5}{1}$, $\frac{1}{2}$, $\frac{f}{dx}$, $\frac{f}{dx^2}$, $\frac{f}{dx^3}$, $\frac{f}{dx^4}$, $\frac{f}{dx^5}$, $\frac{f}{dx^6}$, $\frac{f}{dx^7}$, $\frac{f}{dx^8}$, $\frac{f}{dx^9}$, $\frac{f}{dx^{10}}$, $\frac{f}{dx^{11}}$, $\frac{f}{dx^{12}}$, $\frac{f}{dx^{13}}$, $\frac{f}{dx^{14}}$, $\frac{f}{dx^{15}}$, $\frac{f}{dx^{16}}$, $\frac{f}{dx^{17}}$, $\frac{f}{dx^{18}}$, $\frac{f}{dx^{19}}$, $\frac{f}{dx^{20}}$, $\frac{f}{dx^{21}}$, $\frac{f}{dx^{22}}$, $\frac{f}{dx^{23}}$, $\frac{f}{dx^{24}}$, $\frac{f}{dx^{25}}$, $\frac{f}{dx^{26}}$, $\frac{f}{dx^{27}}$, $\frac{f}{dx^{28}}$, $\frac{f}{dx^{29}}$, $\frac{f}{dx^{30}}$, $\frac{f}{dx^{31}}$, $\frac{f}{dx^{32}}$, $\frac{f}{dx^{33}}$, $\frac{f}{dx^{34}}$, $\frac{f}{dx^{35}}$, $\frac{f}{dx^{36}}$, $\frac{f}{dx^{37}}$, $\frac{f}{dx^{38}}$, $\frac{f}{dx^{39}}$, $\frac{f}{dx^{40}}$, $\frac{f}{dx^{41}}$, $\frac{f}{dx^{42}}$, $\frac{f}{dx^{43}}$, $\frac{f}{dx^{44}}$, $\frac{f}{dx^{45}}$, $\frac{f}{dx^{46}}$, $\frac{f}{dx^{47}}$, $\frac{f}{dx^{48}}$, $\frac{f}{dx^{49}}$, $\frac{f}{dx^{50}}$, $\frac{f}{dx^{51}}$, $\frac{f}{dx^{52}}$, $\frac{f}{dx^{53}}$, $\frac{f}{dx^{54}}$, $\frac{f}{dx^{55}}$, $\frac{f}{dx^{56}}$, $\frac{f}{dx^{57}}$, $\frac{f}{dx^{58}}$, $\frac{f}{dx^{59}}$, $\frac{f}{dx^{60}}$, $\frac{f}{dx^{61}}$, $\frac{f}{dx^{62}}$, $\frac{f}{dx^{63}}$, $\frac{f}{dx^{64}}$, $\frac{f}{dx^{65}}$, $\frac{f}{dx^{66}}$, $\frac{f}{dx^{67}}$, $\frac{f}{dx^{68}}$, $\frac{f}{dx^{69}}$, $\frac{f}{dx^{70}}$, $\frac{f}{dx^{71}}$, $\frac{f}{dx^{72}}$, $\frac{f}{dx^{73}}$, $\frac{f}{dx^{74}}$, $\frac{f}{dx^{75}}$, $\frac{f}{dx^{76}}$, $\frac{f}{dx^{77}}$, $\frac{f}{dx^{78}}$, $\frac{f}{dx^{79}}$, $\frac{f}{dx^{80}}$, $\frac{f}{dx^{81}}$, $\frac{f}{dx^{82}}$, $\frac{f}{dx^{83}}$, $\frac{f}{dx^{84}}$, $\frac{f}{dx^{85}}$, $\frac{f}{dx^{86}}$, $\frac{f}{dx^{87}}$, $\frac{f}{dx^{88}}$, $\frac{f}{dx^{89}}$, $\frac{f}{dx^{90}}$, $\frac{f}{dx^{91}}$, $\frac{f}{dx^{92}}$, $\frac{f}{dx^{93}}$, $\frac{f}{dx^{94}}$, $\frac{f}{dx^{95}}$, $\frac{f}{dx^{96}}$, $\frac{f}{dx^{97}}$, $\frac{f}{dx^{98}}$, $\frac{f}{dx^{99}}$, $\frac{f}{dx^{100}}$.

The main display shows the expression $\frac{d^2}{dx^2}(x^3 - 2 \cdot x)$ and the result $6 \cdot x$.

The keyboard shows the following layout:

Math1	Line	$\frac{f}{dx}$	$\sqrt{\quad}$	π	\rightarrow
Math2	\square	e^{\square}	ln	i	∞
Math3	$\frac{d}{d\square}$	$\frac{d^2}{d\square^2}$	$\frac{d^3}{d\square^3}$	\int	lim
Trig	$\frac{d}{d\square}$	$\frac{d^2}{d\square^2}$	$\frac{d^3}{d\square^3}$	\int	lim
Var	$\frac{d}{d\square}$	$\frac{d^2}{d\square^2}$	$\frac{d^3}{d\square^3}$	\int	lim
abc	sin	cos	tan	θ	t
	\leftarrow	$\frac{f}{dx}$	$\frac{f}{dx^2}$	ans	EXE

At the bottom, the mode is set to Alg, and the unit is set to Decimal.

The screenshot shows the 'Edit Action Interactive' window. The top toolbar is the same as in the previous screenshot.

The main display shows the expression $\frac{d^2}{dx^2}(x^3 - 2 \cdot x) | x=3$ and the result 18 .

The keyboard layout is the same as in the previous screenshot.

At the bottom, the mode is set to Alg, and the unit is set to Decimal.

The screenshot shows the 'Edit Action Interactive' window. The top toolbar is the same as in the previous screenshots.

The main display shows the expression $\frac{d}{dt}(t^4)$ and the result $4 \cdot t^3$.

The keyboard layout is the same as in the previous screenshots.

At the bottom, the mode is set to Alg, and the unit is set to Decimal.