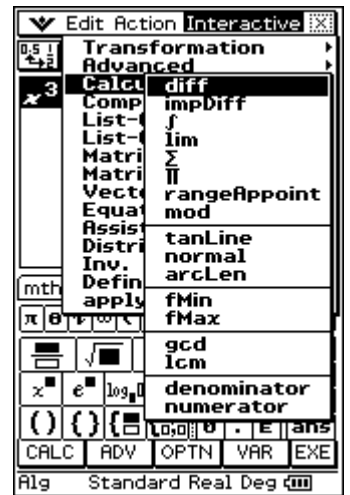


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<b>140</b>	<b>Differentiation Basics</b>	Author	Charlie Watson
		Date	31 January 2010
		CPM OS	<b>03.04.4000</b>

Start in the Main application.

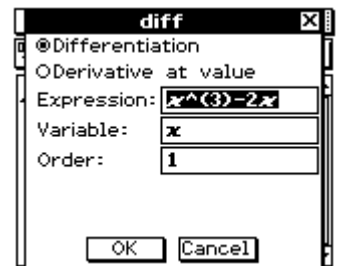
Enter the expression  $x^3 - 2x$  and drag the pen back across it to select.

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

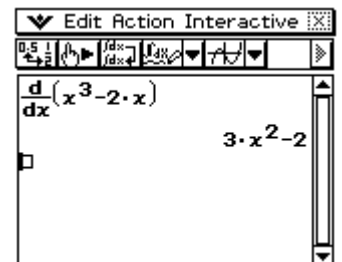


The **diff** dialogue box opens.

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

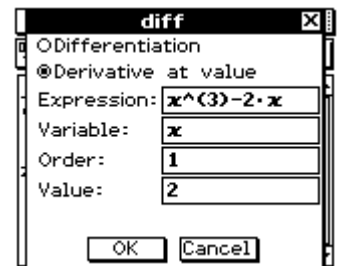


Classpad completes the syntax and returns the derivative.

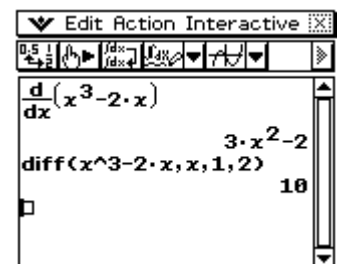


Sometimes the value of the derivative for a given  $x$ -value is required.

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

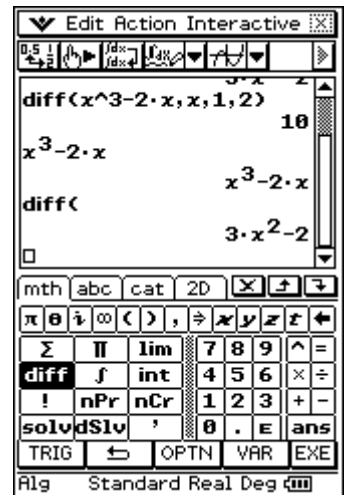


Classpad completes the syntax in a different way.

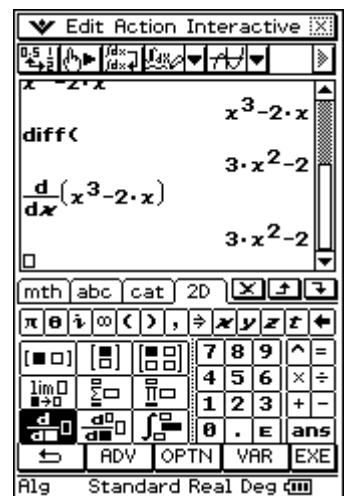


A simple shortcut for first order derivatives with respect to  $x$  is as follows.

Enter the expression, tap **EXE**, tap the **math** tab, **CALC**, **diff** and **EXE**.



The  $\frac{d}{dx}$  templates can be found in the **2D** tab.



Higher order derivatives can be found either using the **Interactive**, **Calculate**, **diff** method or using the **2D** template shown.

Differentiation with respect to any variable is also possible.

