

# Differentiation checking.

This resource was written by Derek Smith with the support of CASIO New Zealand. It may be freely distributed but remains the intellectual property of the author and CASIO.



Select RUN mode from the main menu by using the arrow keys to highlight the RUN icon or pressing 1.



Checking that you have differentiated correctly:

The 'calculator logic' will return a 0 if incorrectly done or a 1 if correctly done.

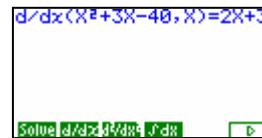
As this calculator is a 'numerical manipulator' and **NOT** a 'symbolic manipulator' the student **MUST** learn how to differentiate  $f'(x)$  or integrate  $\int f(x) dx$

**OPTN**  then **F1**  for the 'calculus tools'

**Example 1:** Differentiate  $y = x^2 + 3x - 40$

**Answer checked:**

Enter in the equation in the form as shown.



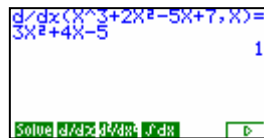
Press **EXE**



The result 1 indicates that it is correctly expanded.

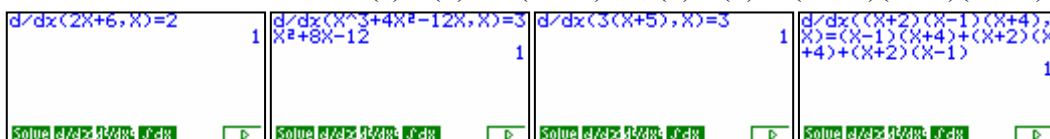
**Example 2:** Differentiate  $f(x) = x^3 + 2x^2 - 5x + 7$

**Answer checked:**



If incorrect the result would be a 0, as shown here in an incorrect differentiation.

**Try these:** Differentiate (a)  $y = 2x + 6$  (b)  $y = x^3 + 4x^2 - 12x$   
(c)  $f(x) = 3(x + 5)$  (d)  $f(x) = (x + 2)(x - 1)(x + 4)$



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