


# Chapter 10 / Example 8

## Finding a gradient

Consider  $y = \frac{x+2}{x-1}, x \neq 1$

Find the gradient of the curve at the points where  $x = 2$  and  $x = 3$ .

Press **MENU** 5 **GRAPH** to display the equation entry screen.

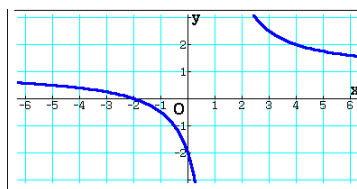
Type  $\frac{x+2}{x-1}$  using the fraction template  and press **EXE** to enter the equation as Y1.

Graph Func : Y=  
Y1:  $\frac{x+2}{x-1}$  [—]  
Y2: [—]  
Y3: [—]  
Y4: [—]  
Y5: [—]  
[SELECT] [DELETE] [TYPE] [TOOL] [MODIFY] [DRAW]

Press **F6** DRAW to display the graph screen

The GDC displays the graph Y1.

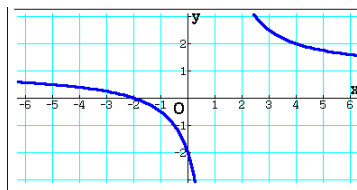
The default axes are  $-6.3 \leq x \leq 6.3$  and  $-3.1 \leq y \leq 3.1$ .




Press **F3** V-Window and then **F3** STANDARD to select the standard window. The standard axes are  $-10 \leq x \leq 10$  and  $-10 \leq y \leq 10$ .

Press **EXIT**, **F6** DRAW to display the graph screen.

The curve is displayed in a suitable window.



Press **EXIT** then press **SHIFT** **MENU** SET UP.

Scroll down to Derivative with  and use **F1** to set this to 'On'. Press **EXIT** to return to the equation entry screen and **F6** DRAW to return to the graph.

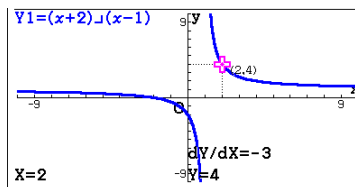
Input/Output: Math  
Draw Type : Connect  
Ineq Type : Union  
Graph Func : On  
Dual Screen : Off  
Simul Graph : Off  
Derivative : On  
On Off

To find the gradient at  $x = 2$  press **F1** Trace

Type 2, the value of the x-coordinate, and press **EXE**.

The GDC displays a point on  $y = \frac{x+2}{x-1}$  and the gradient of the curve at that point.

The gradient at the point where  $x = 2$  is  $-3$ .



## Chapter 10 / **Example 8**

# Finding a gradient

Type 3, the value of the  $x$ -coordinate, and press **EXE**.

The GDC displays a point on  $y = \frac{x+2}{x-1}$  and the gradient of the curve at that point.

The gradient at the point where  $x = 2$  is  $-0.75$ .

