

# Chapter 3 / Example 30 a

## Intersecting Graphs

Find the points of intersection of the graphs of  $f(x) = 4x^2 - 2x - 5$  and  $g(x) = 3x + 2$ .

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

Type  $4x^2 - 2x - 5$  and press **EXE** to enter the first equation as Y1.

Type  $3x + 2$  and press **EXE** to enter the second equation as Y2.

Graph Func : Y=  
 Y1  $4x^2 - 2x - 5$  [—]  
 Y2  $3x + 2$  [—]  
 Y3 : [—]  
 Y4 : [—]  
 Y5 : [—]  
 Y6 : [—]  
 [SELECT] [DELETE] [TYPE] [TOOL] [MODIFY] [DRAW]

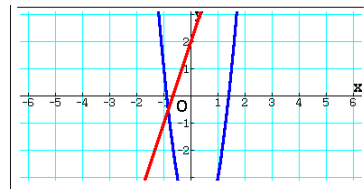
Press **F6** DRAW to display the graph screen

The GDC now displays the curve and the straight-line:

$$Y1 = 4x^2 - 2x - 5$$

$$Y2 = 3x + 2$$

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



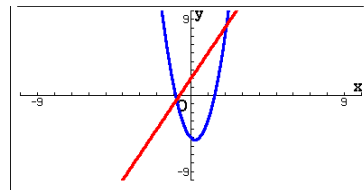
Press **F3** V-Window and then **F3** STANDARD to select the standard window. The standard axes are  $-10 \leq x \leq 10$  and  $-10 \leq y \leq 10$ .

Press **EXIT** when you have finished.

View Window  
 Xmin : -10  
 max : 10  
 scale : 1  
 dot : 0.05291005  
 Ymin : -10  
 max : 10  
 [INITIAL] [TRIG] [STANDARD] [V-MEM] [SQUARE]

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

The GDC now displays the curve and the straight-line with standard axes.



To find the intersections press **F5** G-SOLVE and then press **F5** INTERSECT.

The GDC shows the first intersection.

Y1  $4x^2 - 2x - 5$   
 Y2  $3x + 2$   
 INTSECT  
 X = -0.8380874888 Y = -0.5142624665

Press **EXE** to display the coordinates.

Press **▶** to move to the next zero and press **EXE** to display its coordinates.

Press **EXIT** to leave G-Solv mode and **F6** DRAW to display the graph screen again.

Y1  $4x^2 - 2x - 5$   
 Y2  $3x + 2$   
 INTSECT  
 X = 2.088087489 Y = 8.264262467

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The GDC displays the intersections at  $(-0.838, -0.514)$  and  $(2.09, 8.26)$ .

