



Calculator Appendix C

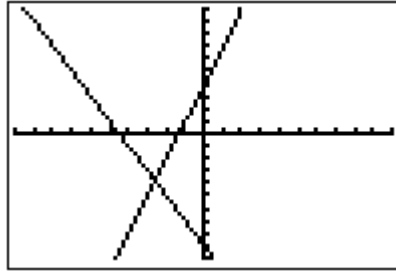
(Finding intersection points)



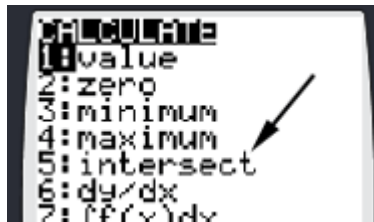
Consider finding the intersection point of two functions ($y = 3x + 4$ and $y = -2x - 9$). With **Y=**, enter the two functions and press **GRAPH**.

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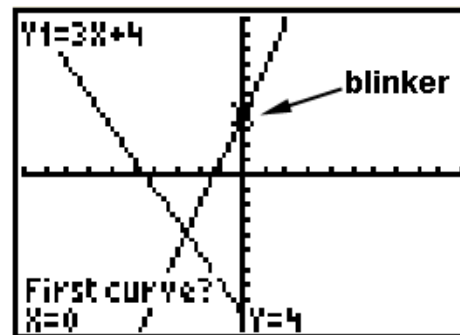
Plot2 Plot3
Y1=3X+4
Y2=-2X-9
Y3=
Y4=
Y5=
Y6=
Y7=
  
```



To initiate the process of finding the intersection, press **2nd | CALC**. From the resulting menu choose **5: intersect** by pressing the **DOWN ARROW** button thus moving the cursor all the way down to **5:** and then pressing **ENTER**, or by pressing the **5** button.

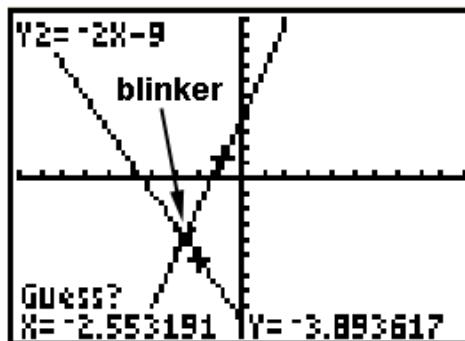
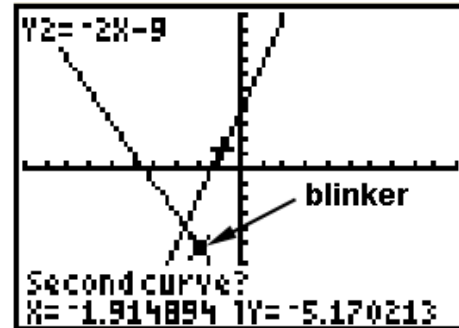


The next screen will show the graph along with a question, "First curve?". It is asking for either one of the curves. A blinker will be positioned on one of the "curves" (actually a line in this example) that is coincidentally also on the y-axis in this example.



The blinker can be moved along the present curve with the **LEFT/RIGHT ARROWS** (The **UP/DOWN ARROWS** jumps between curves). When satisfied that the blinker is distinctly on one of the curves, press **ENTER**.

At this point another question will appear asking for the second curve. Again, move the blinker with the **LEFT/RIGHT ARROWS** until satisfied that the blinker is distinctly on the other curve. Press **ENTER**.



Finally, a third question is presented asking for a, "Guess?" Using the **LEFT/RIGHT ARROWS**, position the blinker approximately over the intersection point and press **ENTER**.

Students often ask why a guess is necessary. It's because the curves are often more complicated than our simple example and **intersect in more than one point**. The calculator needs to know which point we want, so the software inside the calculator insists on a "guess" in all cases.

The coordinates of the point of intersection are now shown at the bottom of the graph screen.

For simple cases like that depicted here in which there is only one intersection point, it is possible to get the answer with three quick **ENTERS**'s after choosing **5: intersect**. (No need to adjust positions with the **LEFT/RIGHT ARROWS**.)

