

Activity 6 - Finding the Area Between Two Curves

$$Y1 = x^2 + x + 1$$

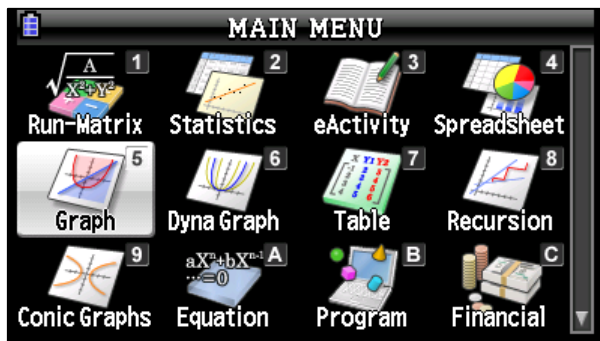
$$Y2 = -x^2 + 2$$

CASIO Domain: [-6.3, 6.3] and Range: [-3.1, 3.1] (INITIAL Setting)

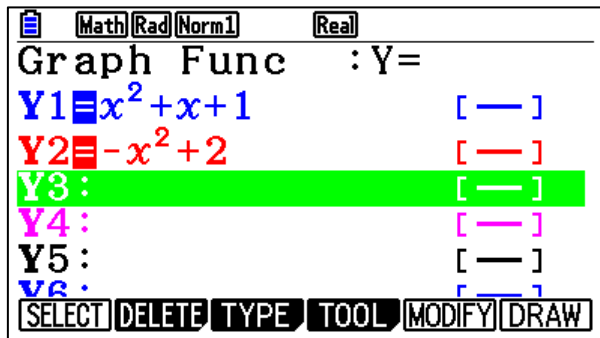
TI Domain: [-10, 10] and Range: [-10, 10]

CASIO (PRIZM)

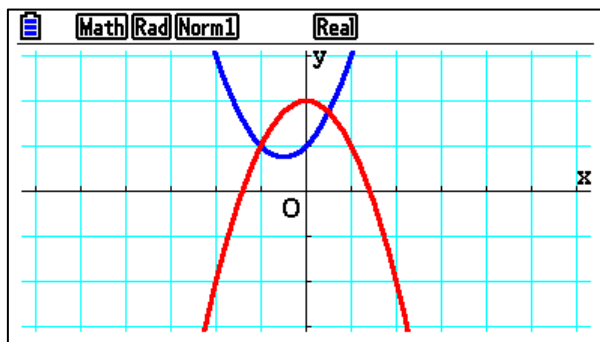
1. From the Main Menu (**MENU**), select the **GRAPH** icon by pressing **5**.



2. Enter functions to be graphed into **Y=** slots. Press **EXE** to store each function.

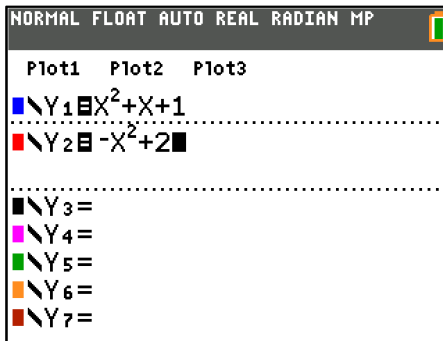


3. Press **F6** (DRAW) to view the graph.

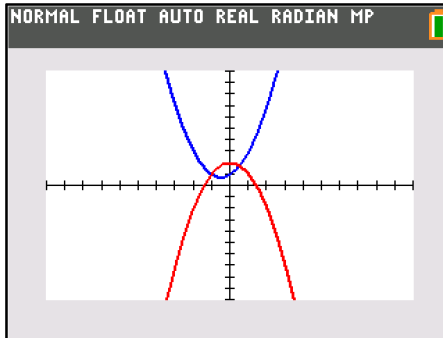


TEXAS INSTRUMENTS (84 PLUS CE)

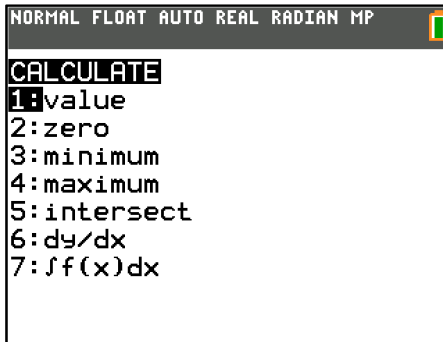
1. Press **Y=** to enter the functions to be graphed.



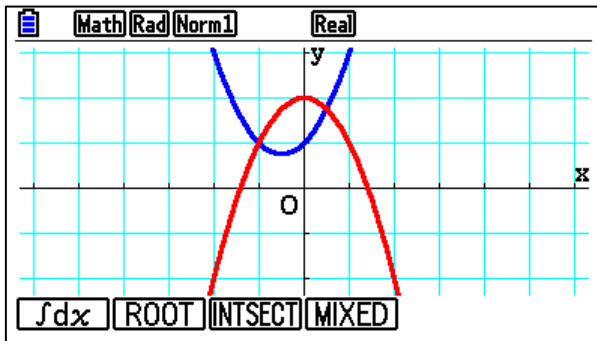
2. Press **GRAPH** to view the graph of the functions.



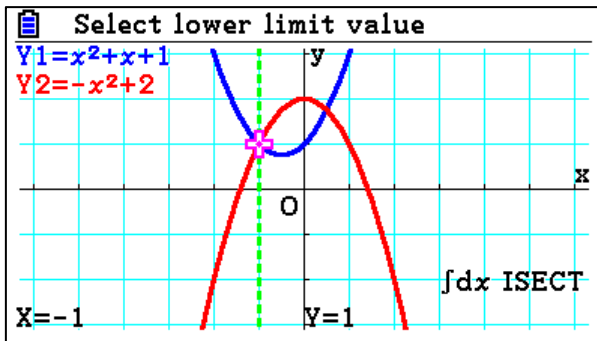
3. Press **2nd** **TRACE** (calc).



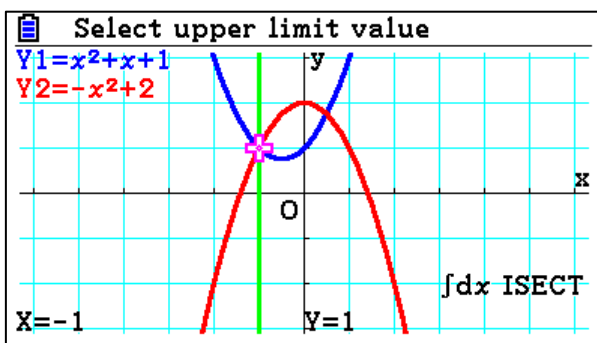
4. Press **F5** (G-Solv), then **F6** (\triangleright) to display more options. Press **F3** ($\int dx$).



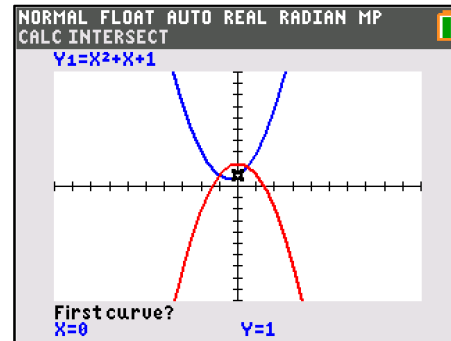
5. Press **F3** (INTSECT) to find the area between the intersections of the curves.



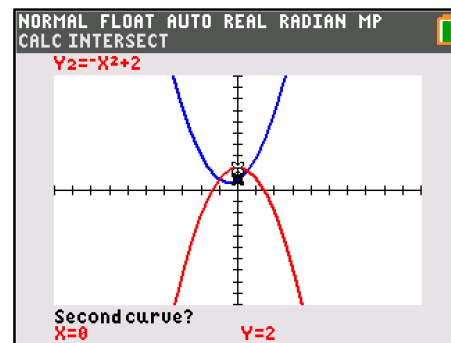
6. Press **EXE** to select the first lower limit value of the intersection.



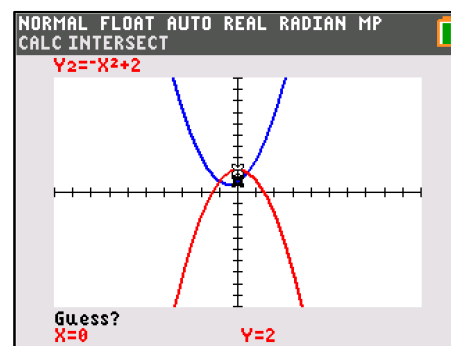
4. Press **5** (intersect) or arrow down to **5** and press **ENTER**.



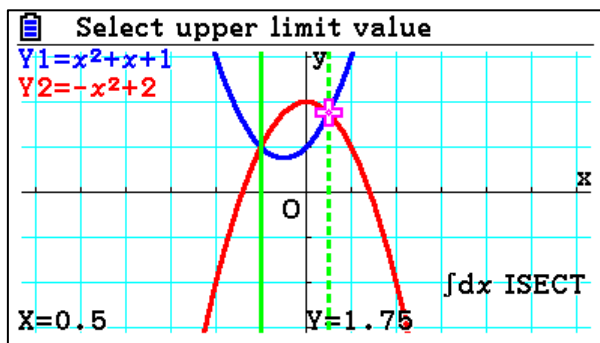
5. Select the first function (highlighted on the screen) by pressing **ENTER**.



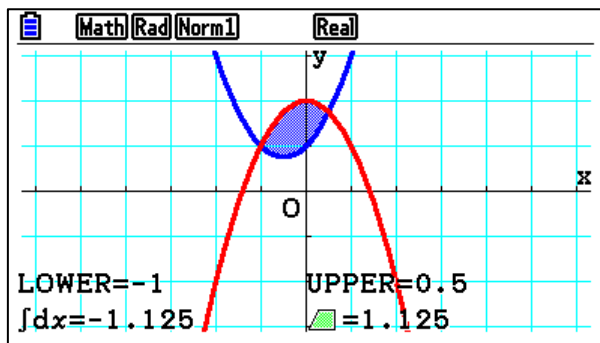
6. Select the second function (highlighted on the screen) by pressing **ENTER**.



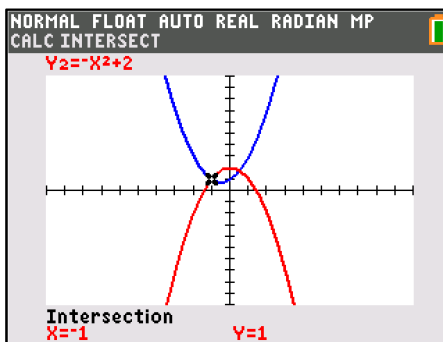
7. Press \blacktriangleright to move to the upper limit value.



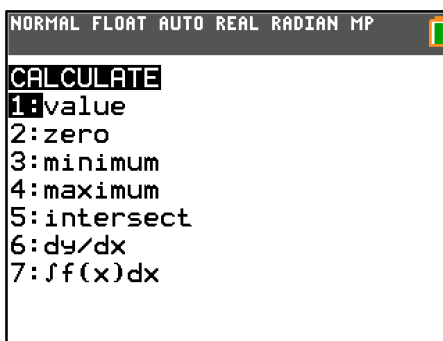
8. Press EXE to set and graph the area.



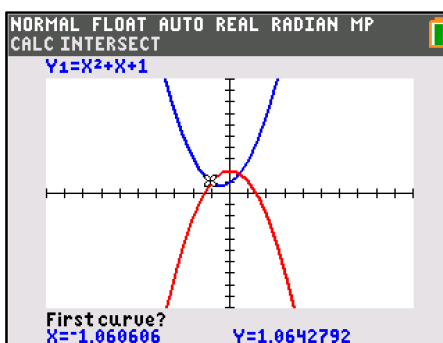
7. Use the arrow keys (\leftarrow , \rightarrow) to move the cursor closer to the left intersection and press ENTER . Write down the **x-value** of this intersection to use later.



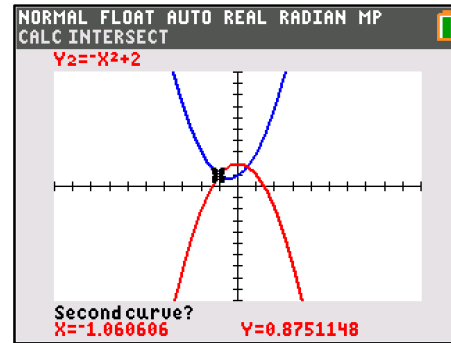
8. To find the next intersection, repeat Steps 3 - 7. Press $\text{2nd}[\text{TRACE}](\text{calc})$.



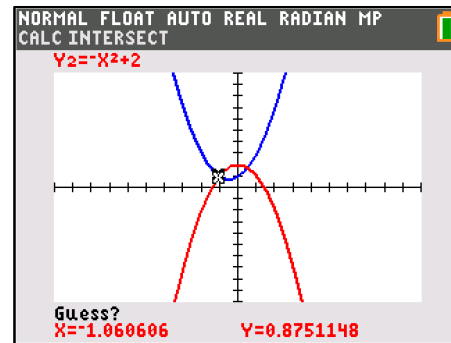
9. Press 5 (intersect).



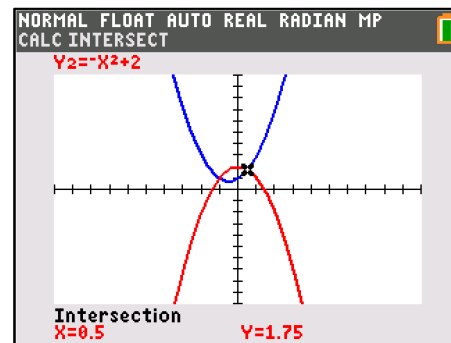
10. Select the first function by pressing **ENTER**.



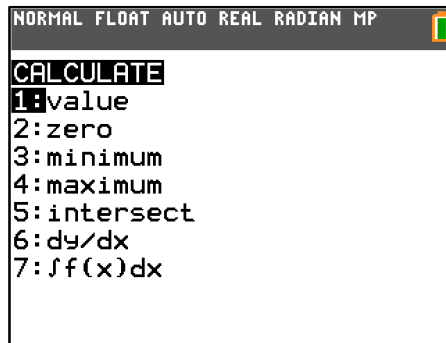
11. Select the second function by pressing **ENTER**.



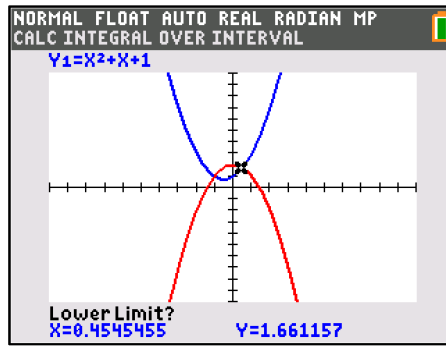
12. Use the arrow keys (**←****→**) to move the cursor closer to the other intersection and press **ENTER**. Write down the **x-value** to use later.



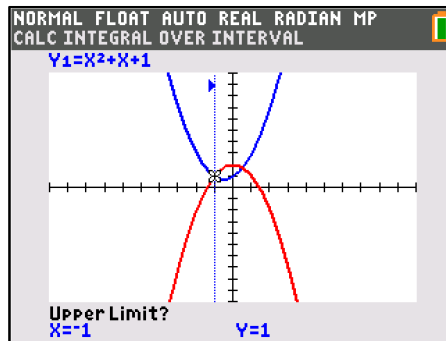
13. Press $\boxed{2\text{nd}}\boxed{\text{TRACE}}$ (calc).



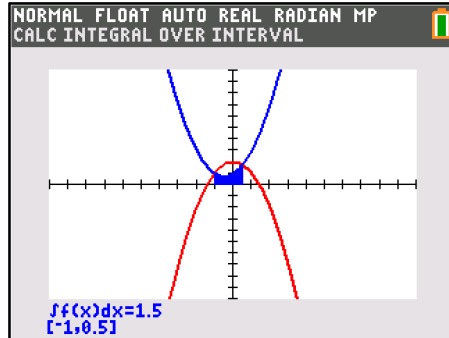
14. Press $\boxed{7}$ ($\int f(x)dx$).



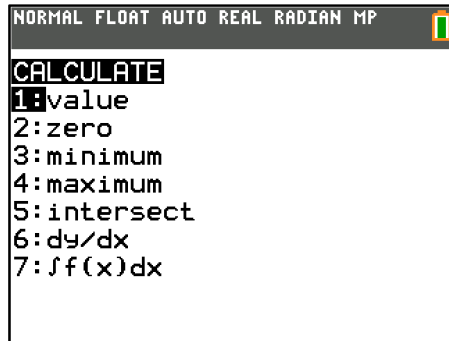
15. Enter the **x-value** for the lower limit (see Step 7) and press $\boxed{\text{ENTER}}$.



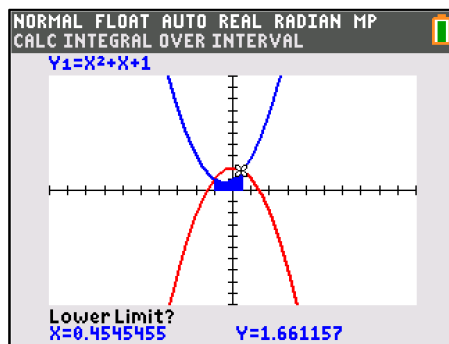
16. Enter the **x-value** for the upper limit (see Step 12) and press **ENTER**. This gives the area under the first curve. Write this number down to use later.



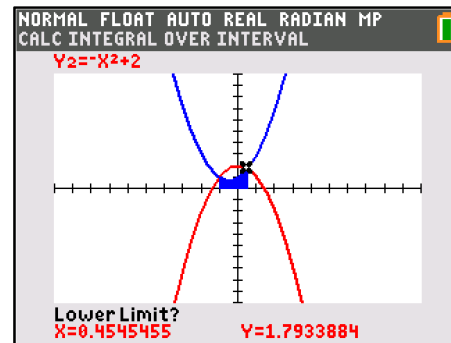
17. Press **2nd****TRACE**(calc).



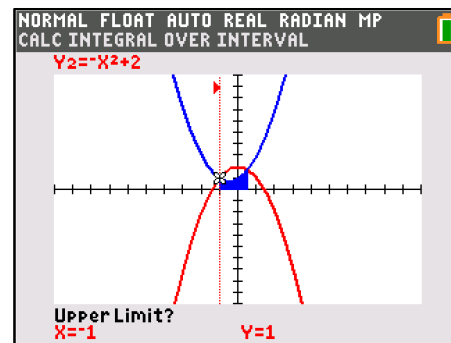
18. Press **7**($\int f(x)dx$).



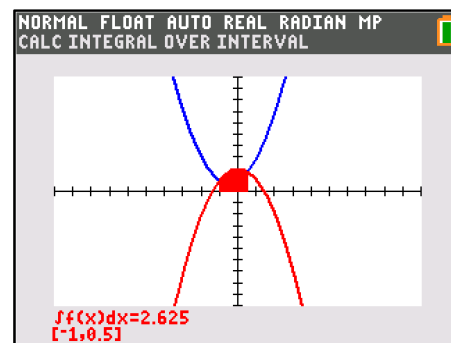
19. Press \blacktriangleleft to select the other function (color of text should change).



20. Enter the **x-value** for the lower limit (see Step 7) and press ENTER .



21. Enter the **x-value** for the upper limit (see Step 12) and press ENTER . This gives the area under the second curve. Write this number down to use later.



22. To find the area between the two curves, press **CLEAR** and subtract the two areas found from Step 16 and Step 21.

