The 8 Ways
with Quadratics: Part I

I. **Guess and Test**

In this method, you just guess a starting number and then evaluate the equation, trying to get a True statement.

For the equation: $3x^2 = 363$
Let $x = 10$
$3 * 10^2 = 363$
$3 * 100 = 363$
$300 = 363$ False (off by 63)

Keep trying other numbers until you get one of the answers, and then look for the other, if you think their might be one.

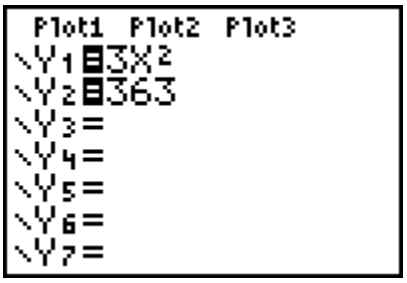
II. **The Algebra Way**

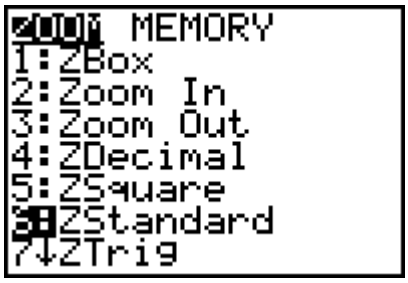
Use factoring as needed and then apply the steps of solving an equation.

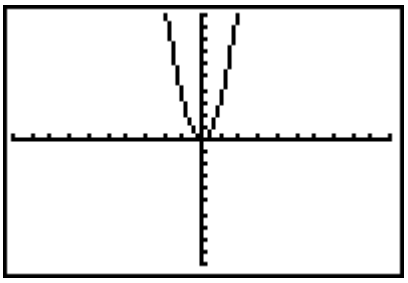
$$\frac{3x^2}{3} = \frac{363}{3}$$
$$x^2 = 121$$
$$x = \pm\sqrt{121}$$
$$x = \pm 11$$

III. **Graph**

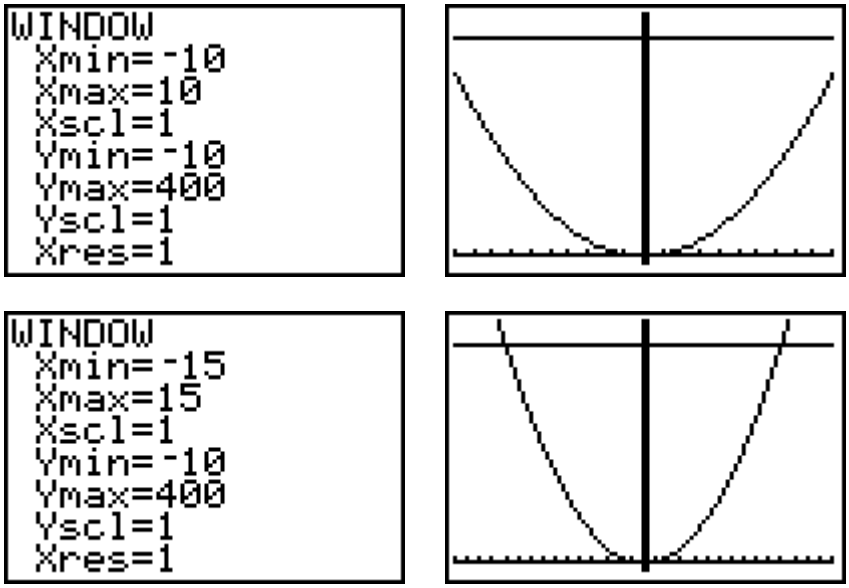
Place the left side of the equation in Y_1 and the right side in Y_2.
Make sure all the Plots are off and then do **q** , as a starting place.



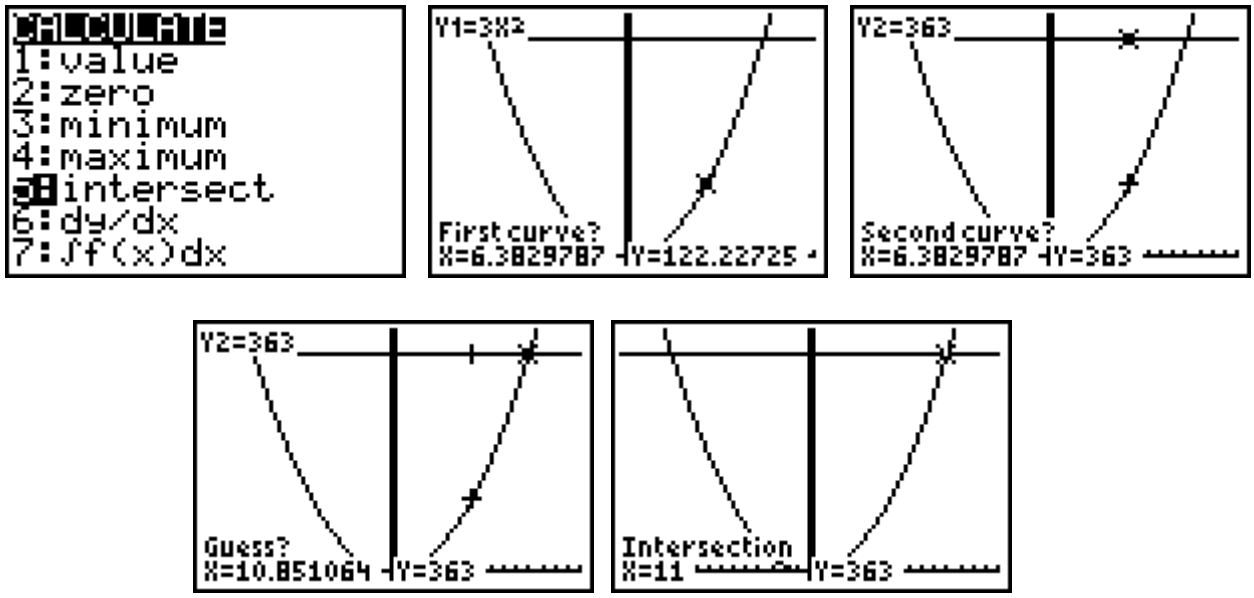




Adjust the **p** until you get the correct view, showing the intersections.



Now request the Intersection by pressing **y** [CALC] and selecting option 5:intersect from the CALCULATE Menu. Identify the required points and report the answers.



Report these values (X and Y) and then repeat for other intersections.