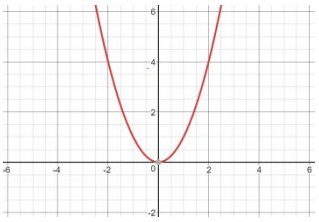
Investigating Transformations

Using Desmos, sketch each transformed graph along with $f(x) = x^2$

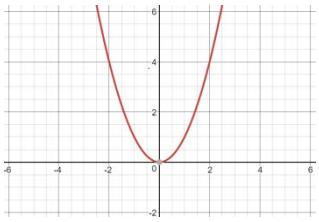
a) Describe the transformation of the new graph compared to x^2.

b) Answer the questions at the bottom of each set of graphs.

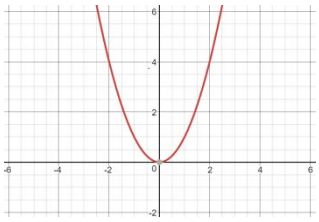
1. $f(x) = x^2 - 2$



2. $f(x) = x^2 + 5$



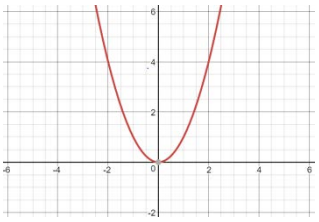
3. $f(x) = -x^2 + 5$



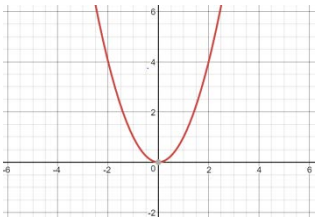
4. Look at Graphs 1-2 and write an observation that may be considered as a big idea regarding that group.

5. What did the negative in front do?

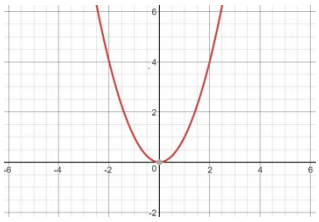
6. $f(x) = (x-2)^2$



7. $f(x) = (x+5)^2$



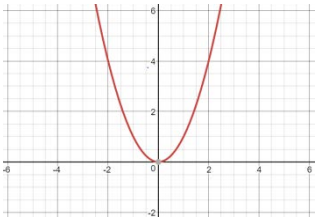
8. $f(x) = -(x+5)^2$



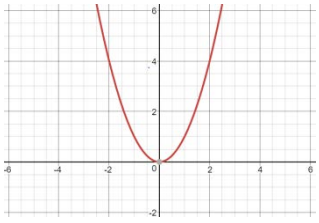
9. Look at Graphs 6-7 and write an observation that may be considered as a big idea regarding that group.

10. What did the negative in front do?

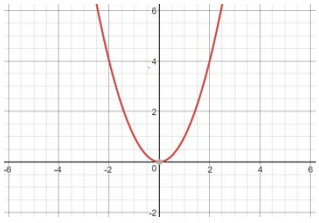
11. $f(x) = (x-4)^2 - 2$



12. $f(x) = (x+4)^2 - 2$

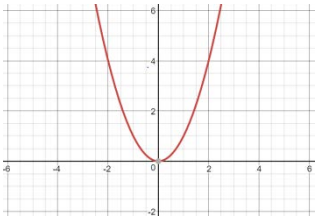


13. $f(x) = (x+5)^2 + 3$

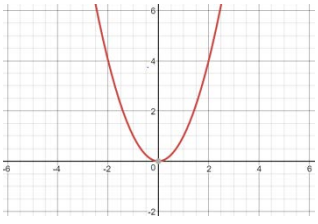


14. Look at Graphs 11-13 and write an observation that may be considered as a big idea regarding that group.

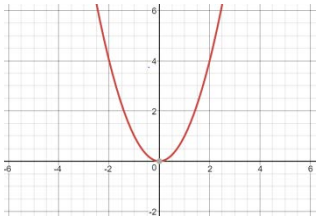
15. $f(x) = -(x+5)^2 + 3$



16. $f(x) = 2x^2$



17. $f(x) = \frac{1}{3}x^2$



18. Look at Graphs 16-17 and write an observation that may be considered as a big idea regarding that group.