

Functions Review

This activity maybe used to review various types of functions and the affect of changing key parameters of the function.

I. Open activity center.

A. Linear Functions

- Load Function_1.act. $y = \frac{1}{2}x$
- Instruct students to send the equation of the function represented in the graph.
- Complete the actions below and discuss graphs sent by students and changes in values that needed to be made to comply with given criteria
 - (1) Clear activity, ask students to send an equation of a steeper graph
 - (2) Clear activity, ask students to send an equation that has a negative slope
 - (3) Clear activity, ask students to send an equation that is parallel to original equation.
 - (4) Clear activity, ask students to send an equation of a perpendicular to original equation.
- Clear activity, load Function_2.act ($y = 7$). Discuss with students “zero” slope and “no slope” and “undefined” slope.

Note: *You will need to retype in the equation for the function after clearing the activity if you want the student to have the parent function as a reference.*

B. Absolute Value Functions

- Clear activity, load Function_3.act ($y = |x|$)
- Instruct students to send the equation of the function represented in the graph.
- Complete the actions below and discuss graphs sent by students and changes in values that needed to be made to comply with given criteria
 - (1) Clear activity, ask students to send an equation that is inverted
 - (2) Clear activity, ask students to send an equation of a function that is shifted to the right
 - (3) Clear activity, ask students to send an equation of a function that is shifted to the down
 - (4) Clear activity, ask students to send an equation of a function that is shifted to the left and moved up and inverted.

C. Quadratic Functions

- Clear activity, load Function_4.act ($y = x^2$)
- Instruct students to send the equation of the function represented in the graph.

- Complete the actions below and discuss graphs sent by students and changes in values that needed to be made to comply with given criteria
 - (1) Clear activity, ask students to send an equation that is inverted
 - (2) Clear activity, ask students to send an equation of a function that is shifted to the left of the parent function
 - (3) Clear activity, ask students to send an equation of a function that is shifted to the up
 - (4) Clear activity, ask students to send an equation of a function that is wider than the parent function
 - (5) Clear the activity, ask student to send an equation that is shifted to the right and narrower than the parent function.

- Clear the activity and load Function_5.act $y = 3 - (x - 4)^2$
- Ask students to match the graph. This is an opportunity to discuss vertex of quadratic functions and zeros of quadratic.

II. Open and send learning check *Function shifts*.