**Unit 6: Transformations**

**Lesson 1: Shifts**

Objectives:

* I can identify parent functions
* I can identify different types of transformations (shifts) from parent functions
* I can sketch functions and their transformation (shifts)

Agenda:

* Use your skills
* Use all your skills
* Challenge your skills

Vocabulary:

* Function, parent function, transformed function, vertical shift, horizontal shift.

Focus Questions:

1. How do we describe the difference between the graphs of any function and its parent function?

Online support:

<https://www.youtube.com/watch?v=nzwdRWmPH9o>

<https://www.youtube.com/watch?v=IFT2uznB7fM>

<https://www.youtube.com/watch?v=7S5HF38DnUY>

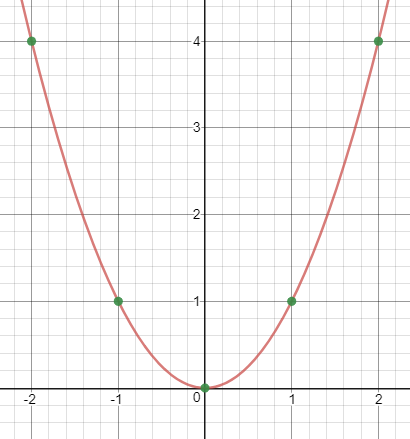
Online Practice:

<https://www.purplemath.com/modules/fcntranq.htm>

<https://www.ixl.com/math/algebra-2/function-transformation-rules>

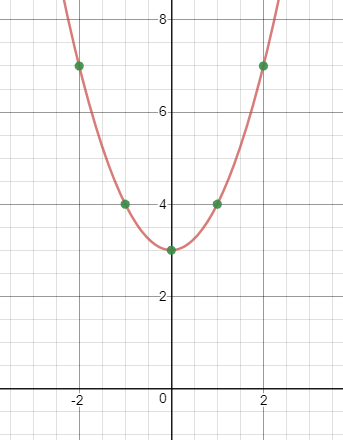
Homework:

Finish the portfolio for Unit 5. Unit test is on Wednesday/Thursday (1- 8 and 1- 9-20)

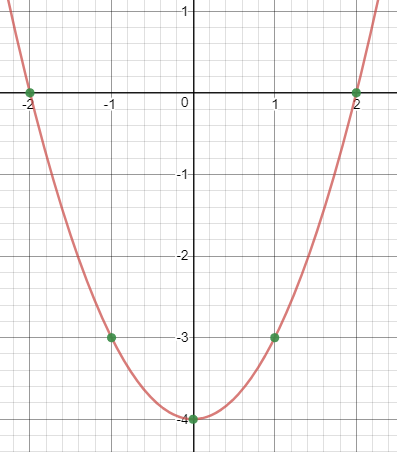


A

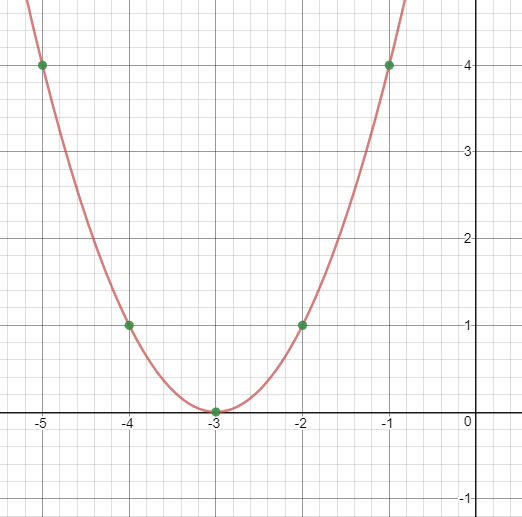
Parent Function



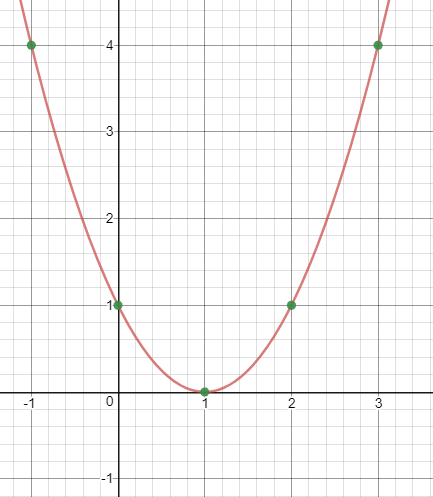
B



C



D

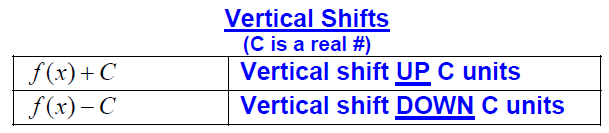
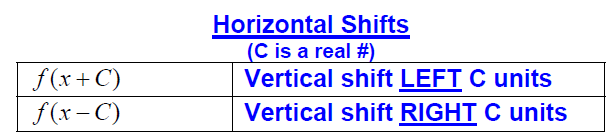


E

Match the correct graph with the correct function

Do Now: one graphing question from the portfolio.

**Lesson 6-1: Class Notes:**



Horizontal

Horizontal

1. Name the parent function first then explain how each graph has changed from its parent function. You might sketch if you choose.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2)Give the name of the parent function, describe the transformation represented, and state the domain and range.

1. Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sketch here: Transformation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Transformation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

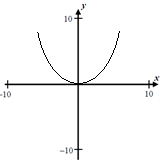
Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Range : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Transformation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Range : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Practice:**

**Sketch the following transformations.**

**Use the Function Transformation word bank above to describe the transformation that changed the parent function f(x) to the transformed functions**

|  |  |  |
| --- | --- | --- |
| Transformation: | Transformation: | Transformation: |
| Transformation: | Transformation: | Transformation: |

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Homework 6-1: Due after the Unit test.**

**Sketch the following transformations from f(x) without a calculator. Use the Function Transformation word bank above to describe the transformation that changed the parent function f(x) to the transformed functions**

|  |  |  |
| --- | --- | --- |
| Parent Function | Transformation: | Transformation: |
| Transformation: | Transformation: | Transformation: |

**Sketch the following transformations from f(x) without a calculator. Use the Function Transformation word bank above to describe the transformation that changed the parent function f(x) to the transformed functions**

|  |  |  |
| --- | --- | --- |
| Parent Function | Transformation: | Transformation: |