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| **Investigating Transformations of Non-Linear Graphs** |
| Use Desmos Graphing Calculator with a -axis scale that goes from to and an -axis scale in degrees that goes from to . |
| **Task 1** |
| Plot the following graphs on the same axes.(a) (b) (c) Print a picture of these graphs and stick it in your book. Describe how the graphs differ from each other. Take the point on the graph of . Where does this point map to on the graphs of and ? Can you describe how the coordinates of this point change in general terms? |
| **Task 2** |
| Plot the following graphs on the same axes.(a) (b) (c) Print a picture of these graphs and stick it in your book. Describe how the graphs differ from each other and how they are similar. Take the point on the graph of . Where does this point map to on the graphs of and . Can you describe how the coordinates of this point change in general terms? |
| **Task 3** |
| Plot the following graphs on the same axes.(a) (b) (c) Print a picture of these graphs and stick it in your book. Describe how the graphs differ from each other. Take the point on the graph of . Where does this point map to on the graphs of and ? Can you describe how the coordinates of this point change in general terms? |
| **Task 4** |
| Plot the following graphs on the same axes.(a) (b) (c) Print a picture of these graphs and stick it in your book. Describe how the graphs differ from each other. Take the point on the graph of . Where does this point map to on the graphs of and ? Can you describe how the coordinates of this point change in general terms? |

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| **Investigating Transformations of Non-Linear Graphs** |
| Change your scale so it now has -axis scale that goes from to and an -axis scale that goes from to . |
| **Task 5** |
| Plot the following graphs on the same axes.(a) (b) Print a picture of these graphs and stick it in your book. Describe how the graphs differ from each other. Take the point on the graph of . Where does this point map to on the graph of ? Can you describe how the coordinates of this point change in general terms? |
| **Task 6** |
| Plot the following graphs on the same axes.(a) (b) Print a picture of these graphs and stick it in your book. Describe how the graphs differ from each other. Take the point on the graph of . Where does this point map to on the graph of ? Can you describe how the coordinates of this point change in general terms? |
| **Challenge** |
| Using what you have learned, **sketch** the following graphs, then use Desmos to check your answers. You will need to go back to the original scale for this challenge.(a) (b) (c) (d) (e) (f) (g) (h)  |