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| **Open the TI-Nspire document *Transformations\_of\_Functions.tns.***  This activity investigates some transformations of functions. The graph of a function *y* = *f*(*x*) will be *translated* and *dilated*. You will be able to compare the new graph with the original to determine the impact of changes to the function on the graph. |  |

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| **Move to page 1.2** |
| **Part One: *.***  1. Click the arrows to change the value of *k.*  a. What happens to the graph of as the value of *k* changes?  b. Change the slider so that *k* > 0. Where is the graph of compared to ?  c. Change the slider so that *k* < 0. Where is the graph of compared to?  d. Change the slider so that *k* = 0. Where is the graph of compared to? | |
| **Move to page 2.1.** | |
| **Part Two: .**  2. Click the arrows to change the value of *a*.  a. What happens to the graph of as the value of *a* changes?  b. Change the slider so that *a* > 1. How does the graph of compare to?  c. Change the slider so that 0 < *a* < 1. How does the graph of compare to?  d. Change the slider so that *a* = -1. How does the graph of compare to? | |
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| **Move to page 3.1.** |
| **Part Three: .**  3. Click the arrows to change the value of *h*.  a. What happens to the graph of as the value of *h* changes?  b. Change the slider so that *h* > 0. Where is the graph of compared to ?  c. Change the slider so that *h* < 0. Where is the graph of compared to ?  d. Change the slider so that *h* = 0. Where is the graph of compared to? |
| **Move to page 4.1.** |
| **Part Four***:*  4. Click the arrows to change the value of *b*.  a. What happens to the graph of as the value of *b* changes?  b. Change the slider so that *b* > 1. How does the graph of compare to?  c. Change the slider so that 0 < *b* < 1. How does the graph of compare to?  d. Change the slider so that *b* = -1. How does the graph of compare to? |

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| 5.Page 5.1 uses a different function. For each transformation, describe the changes in the graph of . Use page 5.1 to check answers.   |  |  |  | | --- | --- | --- | | a. | b. | c. | |