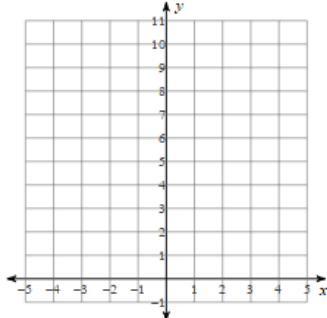
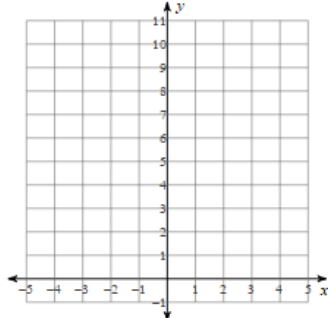
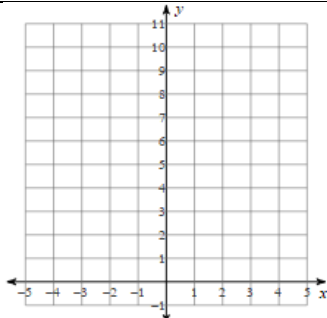
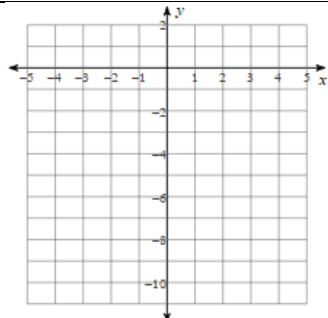
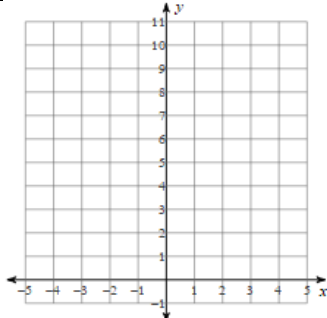
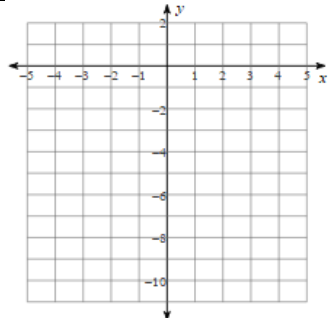


Graphing Exponentials Notes ~ Graph and identify the characteristics for each Exponential Function.

| $f(x) = 2^x$ <table border="1" style="display: inline-table; margin-right: 20px;"> <thead> <tr><th>x</th><th>y</th></tr> </thead> <tbody> <tr><td>-2</td><td></td></tr> <tr><td>-1</td><td></td></tr> <tr><td>0</td><td></td></tr> <tr><td>1</td><td></td></tr> <tr><td>2</td><td></td></tr> </tbody> </table>  | | x | y | -2 | | -1 | | 0 | | 1 | | 2 | | $f(x) = \left(\frac{1}{3}\right)^x$ <table border="1" style="display: inline-table; margin-right: 20px;"> <thead> <tr><th>x</th><th>y</th></tr> </thead> <tbody> <tr><td>-2</td><td></td></tr> <tr><td>-1</td><td></td></tr> <tr><td>0</td><td></td></tr> <tr><td>1</td><td></td></tr> <tr><td>2</td><td></td></tr> </tbody> </table>  | | x | y | -2 | | -1 | | 0 | | 1 | | 2 | |
|--|--|---|--|----|--|----|--|---|--|---|--|---|--|---|--|---|---|----|--|----|--|---|--|---|--|---|--|
| x | y | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| x | y | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asymptote | $y = \underline{\hspace{2cm}}$ | Asymptote | $y = \underline{\hspace{2cm}}$ | | | | | | | | | | | | | | | | | | | | | | | | |
| Domain | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | Domain | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | | | | | | | | | | | | | | | | | | | | | | | | |
| Range | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | Range | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | | | | | | | | | | | | | | | | | | | | | | | | |
| Increase/Decrease | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | Increase/Decrease | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | | | | | | | | | | | | | | | | | | | | | | | | |
| End Behavior | Left: As $x \rightarrow -\infty, y \rightarrow \underline{\hspace{1cm}}$ | End Behavior | Left: As $x \rightarrow -\infty, y \rightarrow \underline{\hspace{1cm}}$ | | | | | | | | | | | | | | | | | | | | | | | | |
| | Right: As $x \rightarrow \infty, y \rightarrow \underline{\hspace{1cm}}$ | | Right: As $x \rightarrow \infty, y \rightarrow \underline{\hspace{1cm}}$ | | | | | | | | | | | | | | | | | | | | | | | | |
| Transformations | | Transformations | | | | | | | | | | | | | | | | | | | | | | | | | |
| $f(x) = \left(\frac{1}{2}\right)^{x-1} + 1$ <table border="1" style="display: inline-table; margin-right: 20px;"> <thead> <tr><th>x</th><th>y</th></tr> </thead> <tbody> <tr><td>-2</td><td></td></tr> <tr><td>-1</td><td></td></tr> <tr><td>0</td><td></td></tr> <tr><td>1</td><td></td></tr> <tr><td>2</td><td></td></tr> </tbody> </table>  | | x | y | -2 | | -1 | | 0 | | 1 | | 2 | | $f(x) = -3(2)^{x-1} - 2$ <table border="1" style="display: inline-table; margin-right: 20px;"> <thead> <tr><th>x</th><th>y</th></tr> </thead> <tbody> <tr><td>-2</td><td></td></tr> <tr><td>-1</td><td></td></tr> <tr><td>0</td><td></td></tr> <tr><td>1</td><td></td></tr> <tr><td>2</td><td></td></tr> </tbody> </table>  | | x | y | -2 | | -1 | | 0 | | 1 | | 2 | |
| x | y | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| x | y | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asymptote | $y = \underline{\hspace{2cm}}$ | Asymptote | $y = \underline{\hspace{2cm}}$ | | | | | | | | | | | | | | | | | | | | | | | | |
| Domain | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | Domain | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | | | | | | | | | | | | | | | | | | | | | | | | |
| Range | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | Range | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | | | | | | | | | | | | | | | | | | | | | | | | |
| Increase/Decrease | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | Increase/Decrease | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | | | | | | | | | | | | | | | | | | | | | | | | |
| End Behavior | Left: As $x \rightarrow -\infty, y \rightarrow \underline{\hspace{1cm}}$ | End Behavior | Left: As $x \rightarrow -\infty, y \rightarrow \underline{\hspace{1cm}}$ | | | | | | | | | | | | | | | | | | | | | | | | |
| | Right: As $x \rightarrow \infty, y \rightarrow \underline{\hspace{1cm}}$ | | Right: As $x \rightarrow \infty, y \rightarrow \underline{\hspace{1cm}}$ | | | | | | | | | | | | | | | | | | | | | | | | |
| Transformations | | Transformations | | | | | | | | | | | | | | | | | | | | | | | | | |
| $f(x) = (3)^{x-2} + 1$  | | $f(x) = -4\left(\frac{1}{2}\right)^{x+1} + 1$  | | | | | | | | | | | | | | | | | | | | | | | | | |
| Asymptote | $y = \underline{\hspace{2cm}}$ | Asymptote | $y = \underline{\hspace{2cm}}$ | | | | | | | | | | | | | | | | | | | | | | | | |
| Domain | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | Domain | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | | | | | | | | | | | | | | | | | | | | | | | | |
| Range | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | Range | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | | | | | | | | | | | | | | | | | | | | | | | | |
| Increase/Decrease | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | Increase/Decrease | $(\underline{\hspace{1cm}}, \underline{\hspace{1cm}})$ | | | | | | | | | | | | | | | | | | | | | | | | |
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| Transformations | | Transformations | | | | | | | | | | | | | | | | | | | | | | | | | |