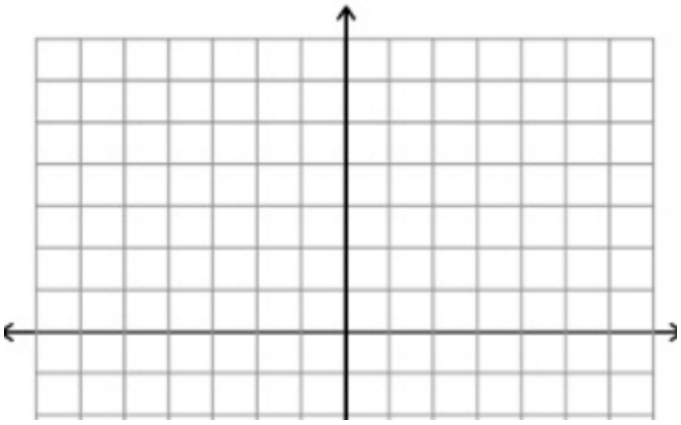
Lesson 23-3

Transformations of Exponential & Logarithmic Functions

Recall: We have a different parent function for every base.

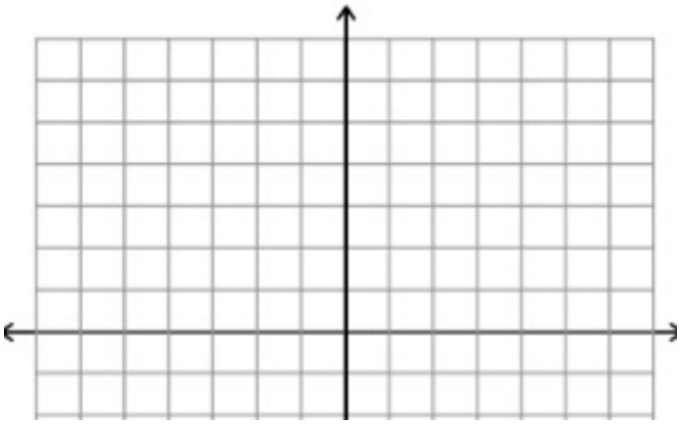
Example #1:
Describe the transformations between
$f(x) = (e)^x$ and $g(x) = 4(e)^{x+2} + 7$.

Example #2: **Graph $f(x) = (e)^x$ and then $h(x) = e^x + 2$**
What is Asymptote? Domain? Range?



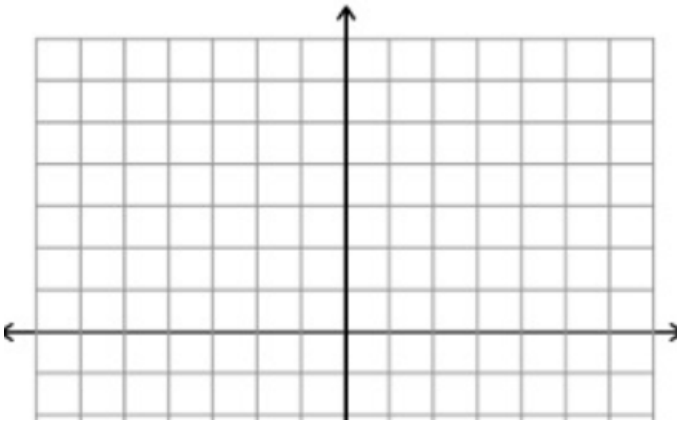
You try: Let $g(x) = (e)^{x-1} + 3$.
State the asymptote, domain, and range.

Example #3: **Graph $y = ln(x)$. Does it have an asymptote?**



How do the graphs of y= ln(x) and $y = e^x$ compare?

Example #4: **Graph $y = log(x)$. State the domain and range. Any Asymptotes?**



Example #5: Let $k(x) = 4log_3 x - 5$.

a) Find $k(81)$.

b) What is the parent function?

c) State the transformations from the parent function.

d) State the domain, range, and asymptote.

Example #6:

Identify any asymptotes and Make a table of values that would allow you to graph: $h(x) = 5log_2(x + 2)$.

You try: Let $m(x) = 3log_4(x + 2)$.