

Name: _____

Review of Exponential Transformations

For the following functions, name all the transformations and then give the y-intercept, asymptote, and whether it is growth or decay:

Function	Transformations	Y-intercept	Asymptote	Growth/Decay
a. $y = -\frac{1}{3}(2)^{x-1}$				
b. $y = 4\left(\frac{1}{2}\right)^x - 7$				
c. $y = -\frac{1}{2}(3)^x + 4$				
d. $y = -\left(\frac{7}{2}\right)^x - 3$				
e. $y = -(3.5)^{x+4}$				

If **a** is **negative**,
the graph...
Reflects

If **h** is **positive**, the graph... *Shift Right*
In the equation, I would see... *(x-h)*
If **h** is **negative**, the graph... *Shift Left*
In the equation, I would see... *(x+h)*

$$y = a(b)^{x-h} + k$$

If **a** is **between 0 and 1**,
the graph...
shrinks
Grows slower

If **a** is **greater than 1**,
the graph...
stretches
Grows faster

If **b** is **greater than 1**...
Growth
If **b** is **between 0 & 1**...
Decay

If **k** is **positive**, the graph...
shifts up
If **k** is **negative**, the graph...
shifts down
Asymptote: *y=k*