

GUIDED NOTES

Graphing Exponential Functions

Name: _____ Period: ____

OBJECTIVE: I can identify the types of exponential functions, as well as evaluate and graph them.

Exponential functions have the form: _____ ; where _____ , and x is any real number.

Domain: _____

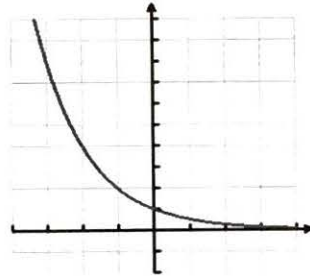
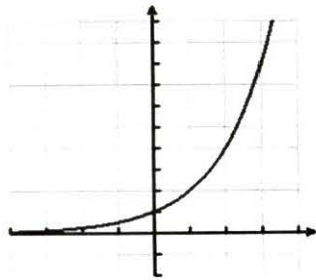
Range: _____

There are two basic types of exponential functions...

This type is a _____ function.

$$f(x) = b^x$$

Where _____



This type is a _____ function.

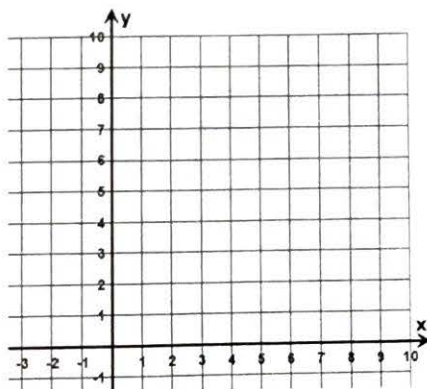
$$f(x) = b^x$$

Where _____

To graph exponential functions, make a table, plot the points and connect them with a smooth curve.

$$f(x) = 2^x$$

| x | f(x) |
|----|------|
| -2 | |
| -1 | |
| 0 | |
| 1 | |
| 2 | |
| 3 | |

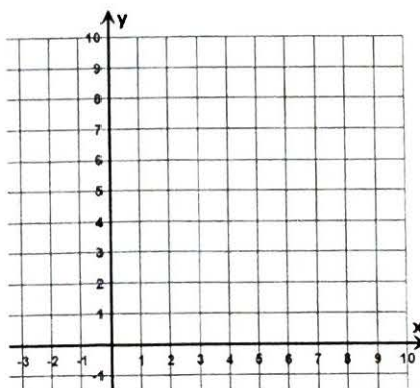


x-intercept: _____

y-intercept: _____

$$f(x) = 4^x$$

| x | f(x) |
|----|------|
| -2 | |
| -1 | |
| 0 | |
| 1 | |
| 2 | |
| 3 | |

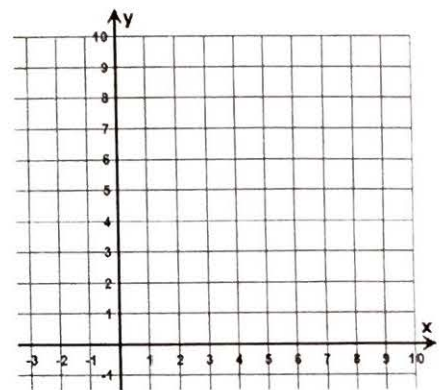


x-intercept: _____

y-intercept: _____

$$f(x) = (3)2^x$$

| x | f(x) |
|----|------|
| -2 | |
| -1 | |
| 0 | |
| 1 | |
| 2 | |
| 3 | |



x-intercept: _____

y-intercept: _____

GUIDED NOTES – Lesson 6-1b

Translations of Exponential Functions

The equation $f(x) = (a)b^{x-h} + k$ is the translation function that helps us understand how changing values impacts the resulting graph.

h tells us about horizontal movement.

If **h** is positive...

If **h** is negative...

a tells us about stretching, reflecting, and compressing.

If $a < 0$...

If $a > 1$...

If $0 < a < 1$...

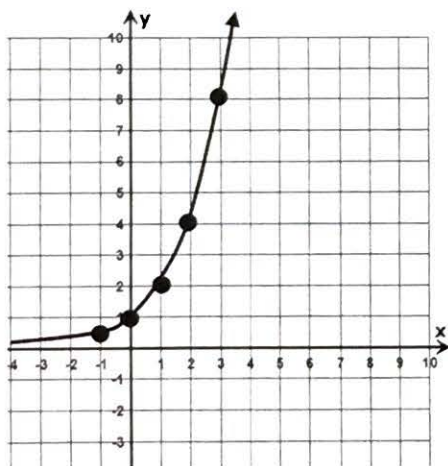
k tells us about vertical movement.

If **k** is positive...

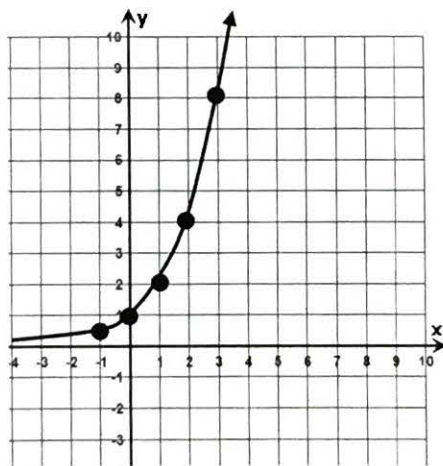
If **k** is negative...

Given the graphed parent function $f(x) = 2^x$, perform the following translations.

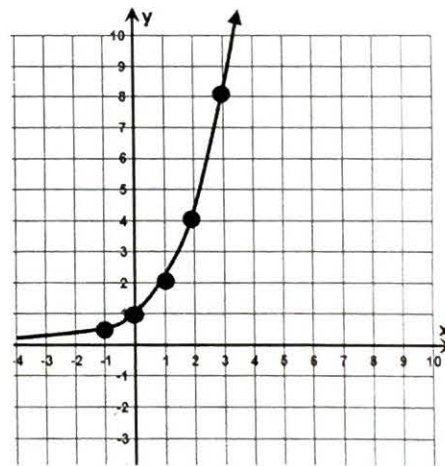
$$f(x) = 2^{x-2}$$



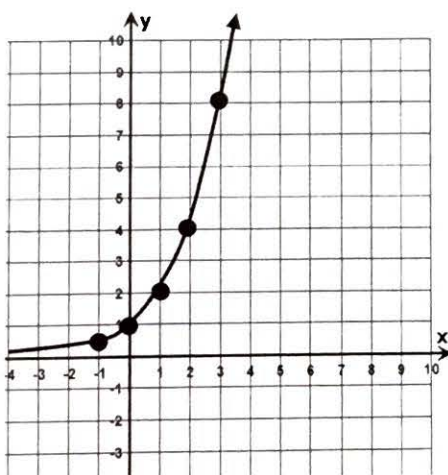
$$f(x) = 2^x - 2$$



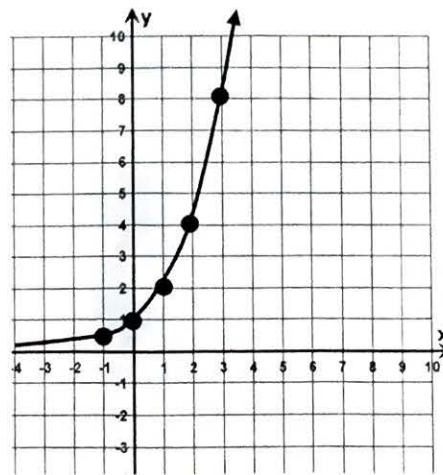
$$f(x) = (-1)2^x$$



$$f(x) = 2^{x+2}$$



$$f(x) = 2^x + 3$$



$$f(x) = (-2)2^x$$

