Exponential Function

_____ represent _____.

Format:

where ___ (sometimes ___ or ___) represents the _____

where ___ is a _____ _____ and not equal to _____

ex.

Recall Special Cases:

♦

♦

Know the Difference

Power Function	versus	**Exponential Function**
base:		base:
exponent:		exponent:

Exponential Applications – Introduction

This model is often found in _____, _____, etc.

_____ component typically represents _____.

_____ component is the _____ that function changes. Over _____, function always either

_____ or _____, similar to _____ function.

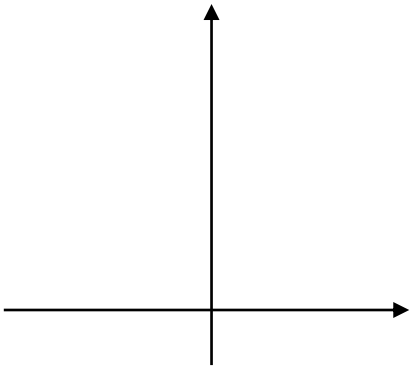
Graph Shapes

Exponential Growth **Exponential Decay**

Exponential Function Examples:

NOT Exponential Functions:

ex. sketch _____



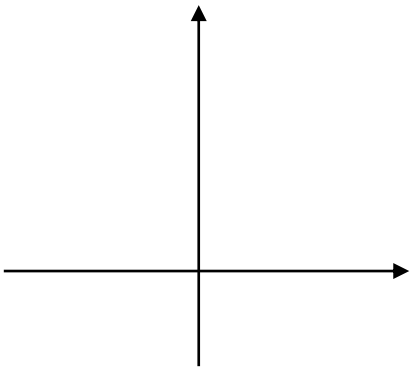
horizontal asymptote:

domain:

range:

Transformation Examples

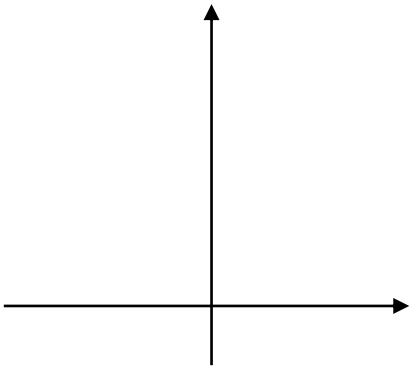
ex. sketch _____



Recall:

then:

ex. sketch _____



horizontal asymptote:

domain:

range:

Basic Exponential Application

Initially, _____ are in a dish. _____ hours later, there are _____ bacteria in the dish. _____ bacteria are there after _____ hours?

interpretation: every ___ hours, there are _____ as many

Compute manually: Problem when _____ is not a _____ of 4.

Use _____ to find _____:

ex. an increase of _____ results in:

Exponential Growth Application

The _____ of Burkina Faso was _____ in 2003.

The population _____ at a _____ rate of _____.

Determine the _____, _____, for this scenario.

Step 1: identify ____

Step 2: write ____ in _____ form

then the function is:

Follow-up question: What was the _____ in _____ after _____?

Exponential Decay Application

When a _____ is given to a _____, it enters their _____.

Over time, the drug is _____ and gradually _____ from the body.

For instance, _____ gets _____ at an approximate rate of _____

and a _____ of _____ is _____.

Determine the _____, _____, that represents the _____ amount after

_____.

Determine if Model Represents Growth or Decay

Using the two previous examples:

Growth **Decay**

Percent to Decimal:

Generalize:

$b > 1$
$b < 1$

Natural Base