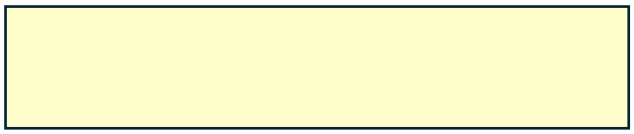
Logarithmic Function

_____ represent the _____ of the _____ function.

Go through the steps of taking an inverse:



Conversion Practice

Write the following in equivalent _____ form:

♦

♦

♦

Write the following in equivalent _____ form:

♦

♦

two special cases:

♦

♦

Evaluating Logarithms

tip: utilize _____ Laws

ex. evaluate _____ Technique: set expression _____ to create _____

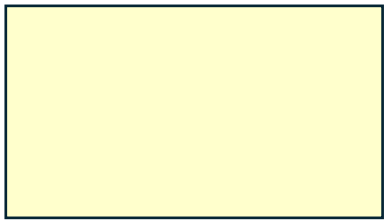
then _____ to an _____

ex. evaluate _____

ex. evaluate _____

ex. evaluate _____

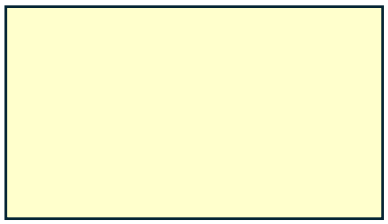
Special Logarithmic Properties



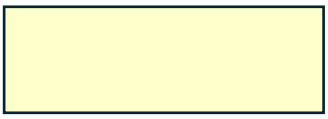
ex. also

ex. also

Inverse Properties



Growth Application using base *e*



Growth **Decay**

ex. In _____, the _____ was _____. By _____,

population had _____ to _____.

Construct an _____ that _____ the _____

between _____ and _____.

Step 1: determine ____

Step 2: plug in to determine _____ (take ___ _____ digits)

then $P(t) =$

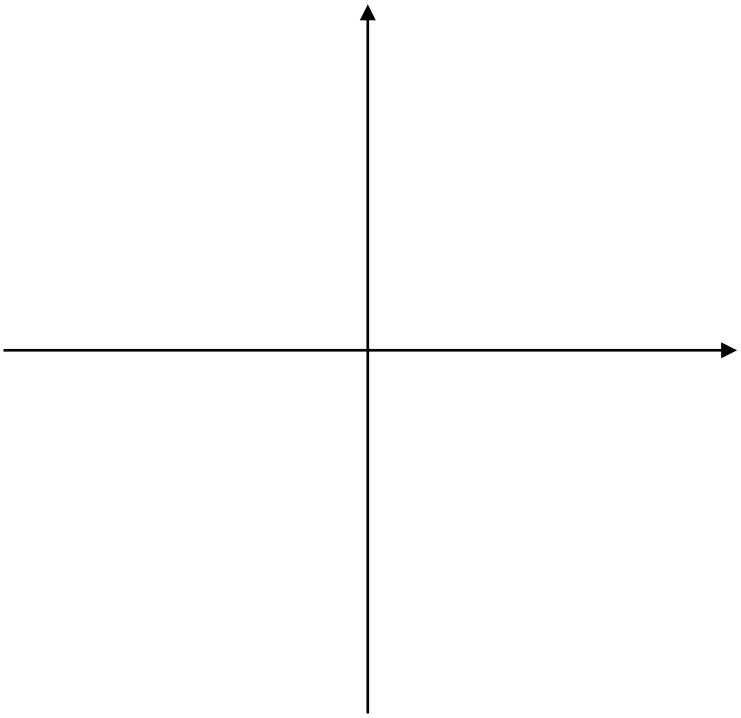
Follow up: What was the _____ in _____? Round to 1 decimal place.

Follow up: By which _____ will the _____ reach _____?

Logarithmic Graph

Recall: graphs of _____ reflect about _____

Recall: _____ and _____ of _____ are swapped



exponent: logarithm:

domain:

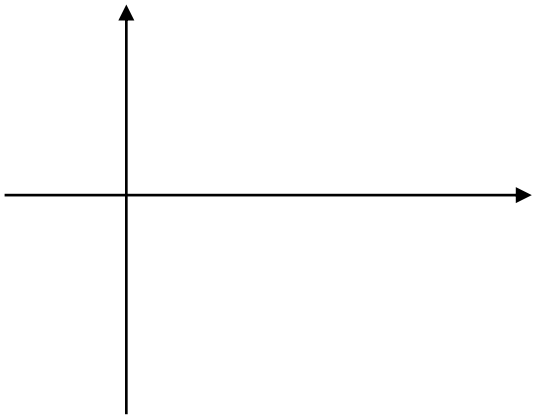
range:

asymptote:

Do: sketch _____

clearly indicate locations of:

- ♦
- ♦



Log Laws

More _____ logarithms can be _____ in the following formats:

♦

♦

convert from one _____ to the _____ to aid in _____

	Condensed	Expanded
Product Rule		
Quotient Rule		
Power Rule		

Product Rule Examples

ex. expand _____

ex. expand _____

ex. expand _____

ex. condense _____

ex. condense _____

Quotient Rule Examples

ex. expand _____

ex. expand _____

ex. condense _____

Power Rule Examples

ex. expand _____

ex. expand _____

in _____ format, _____ is ___

ex. expand _____

ex. condense _____

in _____ format, _____ is ___

and _____ exponent gets becomes a _____

Expanding Logarithmic Expressions

ex. Expand _____ as much as possible

Product Rule

Quotient Rule

Power Rule

ex. Expand _____ as much as possible

Do: Expand _____ as much as possible

Condensing Logarithmic Expressions

ex. Evaluate _____

ex. Write _____ as a _____ logarithm

ex. Fully condense _____

Do: Write _____ as a _____ logarithm

Do: Write _____ as a _____ logarithm

Greater Than Two Terms

ex. Write _____ as a _____ logarithm