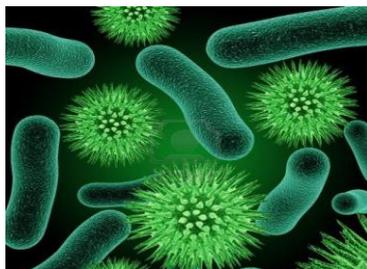


Goals



By the end of this week, you should be able to:

- Graph functions of the form $f(x) = a^x$ and $f(x) = \log_a x$
- Use your CAS calculator to graph functions
- Identify how the features of these basic graph changes under reflection, translation and dilation
- Understand the relationship between an exponential and a logarithmic function.

Theoretical Components

1. Youtube video on exponential functions:
<http://www.khanacademy.org/video/exponential-growth-functions?topic=algebra-worked-examples-2>
2. Youtube video on logarithmic functions:
<http://www.khanacademy.org/video/graphing-logarithmic-functions?topic=developmental-math-3>
3. Read through the sections from Chapter 5 (5D & 5G) Methods Quest 11 ebook and make notes on the various graphs of exponential and logarithmic functions.
4. Go through the characteristics of exponential functions:
<http://www.regentsprep.org/Regents/math/algebra/ATP8b/exponentialFunction.htm>
5. Go through the characteristics of logarithmic functions:
<http://www.regentsprep.org/Regents/math/algebra/ATP8b/logFunction.htm>

Using the CAS:

<http://www.classpad.com.au/>

Go to *Basic Menu*, then *Graph and Table Section*

Practical Components

1. Complete the sets of questions in the following links (keep a record of what you have done):
<http://www.regentsprep.org/Regents/math/algebra/ATP8b/logpractice.htm>
<http://www.regentsprep.org/Regents/math/algebra/ATP8b/logpractice.htm>
2. Do questions from Ex 5D & Ex 5G from Yr 11 Methods e-book.
Perhaps try every 2nd or 3rd question i.e Qs1, 2, 3, 5 and 7 parts a,c,e; Q4; Q6
3. Cambridge 3 Unit page 441 Q11, 14a,b

Investigation

Task 1

Read through to get an insight on the number 'e': <http://bit.ly/w8OiD>

Read through to get an insight on natural logs (ln): <http://bit.ly/HsQLF>

Find a real life use for logarithms or exponential expressions/equations and discuss why and how they are used.

Task 2 – PTO

QFO

Quiz/Forum/Other

Quiz: No quiz this week

Investigation

Task 2

Marta was convinced that there had to be some way to graph $y = \log_2 x$ on her graphing calculator. She typed in $y = \log(2^x)$ and hit **EXE**.

"It WORKED!" Marta yelled in triumph.

"Whaaaaat?" said Celeste. *"I think $y = \log_2 x$ and $y = \log(2^x)$ are totally different, and I bet we can prove it by converting both of them to exponential form."*

"Yeah, I think you're wrong, Marta," said Sophia. *"I think we can prove $y = \log_2 x$ and $y = \log(2^x)$ are totally different by looking at the graphs."*

- Show that $y = \log_2 x$ and $y = \log(2^x)$ are different by sketching the graph of $y = \log_2 x$. Then sketch what your CAS shows to be the graph of $y = \log(2^x)$.
- Now show that they are different by converting both of them to exponential form.