| Solve $2^{x} = 8$ |             |
|-------------------|-------------|
|                   | $2^{x} = 8$ |
|                   | x = 3       |
|                   |             |

Solve  $2^x = 16$ 

$$2^x = 16$$
$$x = 4$$

Solve  $2^x = 12$ 

 $2^{x} = 12$  $\log 2^{x} = \log 12$  $x \log 2 = \log 12$  $x = \frac{\log 12}{\log 2}$  $x \approx 3.58$ 

| MathRadNorm1 d/cla+bi                |
|--------------------------------------|
| log 12÷log 2                         |
| 3.584962501<br>log <sub>2</sub> (12) |
| 3.584962501                          |
|                                      |
|                                      |
| MAT/VCT logab Abs $d/dx d^2/dx^2$    |

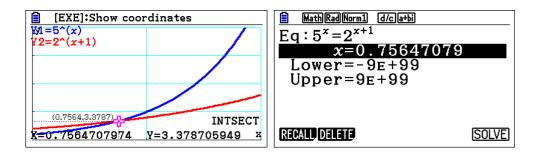
Solve 
$$3^{x+1} = \frac{1}{27}$$

$$3^{x+1} = \frac{1}{27}$$
$$3^{x+1} = \frac{1}{3^3}$$
$$3^{x+1} = 3^{-3}$$
$$x + 1 = -3$$
$$x = -4$$

Solve  $5^x = 2^{x+1}$  writing your answer in the form  $\frac{lna}{lnb}$  where *a* and *b* are rational numbers

Your GDC will solve this equation

...but not leave the answer in the form  $\frac{lna}{lnb}$ 



$$5^{x} = 2^{x+1}$$
$$ln(5^{x}) = ln(2^{x+1})$$
$$xln5 = (x + 1)ln2$$
$$xln5 = xln2 + ln2$$
$$xln5 - xln2 = ln2$$
$$x(ln5 - ln2) = ln2$$
$$x = \frac{ln2}{ln5 - ln2}$$
$$x = \frac{ln2}{ln\frac{5}{2}}$$

Logarithms and Indices Page 2