- 1. Consider the function $f(x) = 1.5^x$.
 - (a) Fill in the following table. Do you notice any relationship between the second and fourth columns?

x	f(x)	f(x+1)	f(x+1) - f(x)
-3			
-2			
-1			
0			
1			
2			
3			
4			
5			
6			

(b) Graph the second and fourth columns below.

i	I	I	I	I	I	I	I		l	I	I
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1	I	I	I	I	I	I	I		I	I	I
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	1	1	1	1	1	1	1			1	1
	1	1	1	1	1	1	1			1	1
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T	I	I	I	I	I	I	I		I	I	I
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1	I	I	I	I	I	I	I		I	I	I
1	1	1	1	1	1	1	1			1	1
1	1	1	1	1	1	1	1			1	1
i.	I	I	I	I	l I	I	I		l	I	I
г		r			r	r	r			r	r
1	1	1	1	1	1	1	l			l	1
	1	1	1	1	1	1	1			1	1
1	1	1	1	1	1	1					1
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T	I	I	I	I	I	I	I		l	I	I
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1	1	1	1	1	1	1	1			1	1
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F											
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I.	I	I	I	I	I	I	I		I	I	I
					r	r	r			r	r
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1	1	1	1	1	1	1	1		1	1	1
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- 2. Consider the function $g(x) = 0.75^x$.
 - (a) Fill in the following table. Do you notice any relationship between the second and fourth columns?

x	g(x)	g(x+1)	g(x+1) - g(x)
-3			
-2			
-1			
0			
1			
2			
3			
4			
5			
6			

(b) Graph the second and fourth columns below. Choose your vertical scale to make the graphs as visible as possible.

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- 3. Consider the function $\ln x$.
 - (a) Fill in the following table. Do you notice any relationship between the second and fourth columns?

x	$\ln x$	$\ln(x+1)$	$\ln(x+1) - \ln(x)$
0.25			
0.5			
1			
2			
3			
4			
5			
6			
7			
8			
9			

(b) Graph the second and fourth columns below. Can you guess an approximate formula for the fourth column?

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r -r -r	

- 4. (a) Draw the graph of a function that has no inverse, and **EXPLAIN** how you can be sure it has no inverse.
 - (b) Draw a non-linear graph of a function that has an inverse, **EX-PLAIN** how you can be sure that function has an inverse, and draw the graph of its inverse.