Do w/ class

range: $(-\infty, \infty)$

reflects graph over x-axis

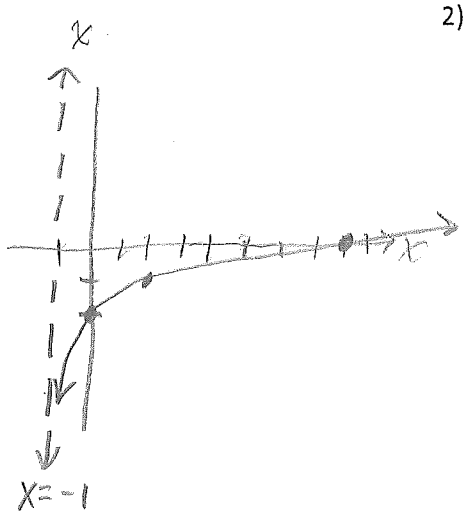
Graph the following, and find the domain, range, equation of vertical asymptote, x-intercept, and test points.

1) $f(x) = \log_3(x+1) - 2$ ← think backwards

x	y
2	-1
0	-2
8	0

D: $x+1>0 \Rightarrow x>-1$

VA: $x+1=0 \Rightarrow x=-1$



Label VA!

Should be able to do quickly.

2) $g(x) = -\log_5 x$

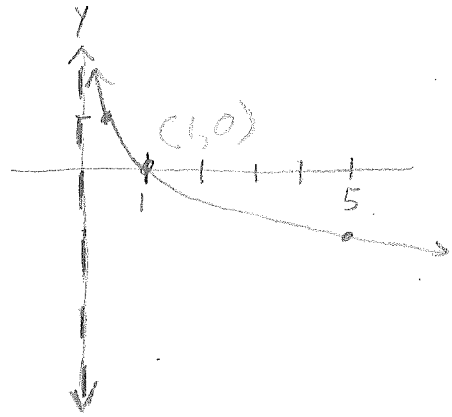
D: $x>0$

R: $(-\infty, \infty)$

VA: $x=0$

x-int: $(1,0)$

x	y
5	-1
1	0
25	-2
$\frac{1}{5}$	1



3) $h(x) = 1 - \log_5(x-2)$ → $-\log_5(x-2)+1$

$\log_5(x-2)=1 \rightarrow 5=x-2$

$7=x$

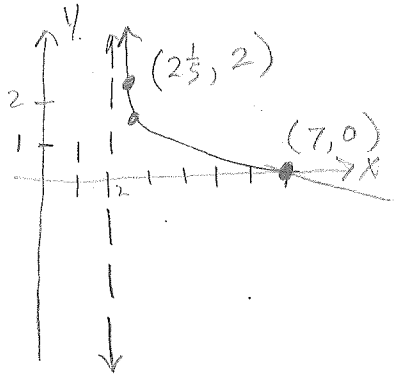
D: $x-2>0 \Rightarrow x>2$ $(2,\infty)$

R: $(-\infty, \infty)$

VA: $x-2=0 \Rightarrow x=2$

x-int: $(7,0)$

x	y
27	-1
$2\frac{1}{2}$	1.4306
$2\frac{1}{5}$	2



4) $f(x) = \ln x$

x	y
0.367	-1
1	0
2.7	1
7.3	2
20.0	3

$\ln x=-1$

$\ln x=0$

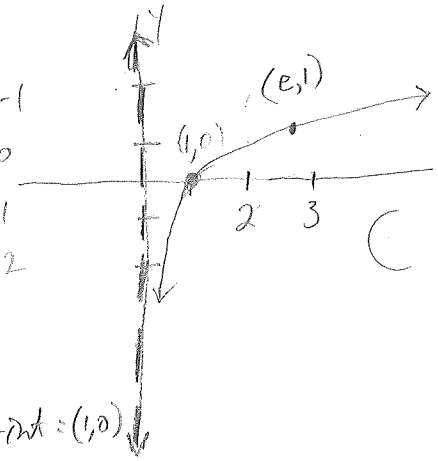
$\ln x=1$

$\ln x=2$

VA: $x=0$

D: $(0,\infty)$

R: $(-\infty,\infty)$



x-int: $(1,0)$

5) $g(x) = \ln(2-x)$ → $\log_e(2-x)$

D: $2-x>0 \rightarrow 2>x$

R: $(-\infty,\infty)$

VA: $2-x=0 \rightarrow x=2$

x-int: $(1,0)$

$0=\ln(2-x)$

$10^0=2-x$

$1=2-x$

$x=1$

$\log_e e=1$

$2-x=e$

$x=2-e$

$x\approx-.7$

$\log_e \frac{1}{e}=-1$

$2-x=\frac{1}{e}$

$x=2-\frac{1}{e}$

$x\approx1.6$

x	y
1	0
0	.69
-.7	1
1.6	-1