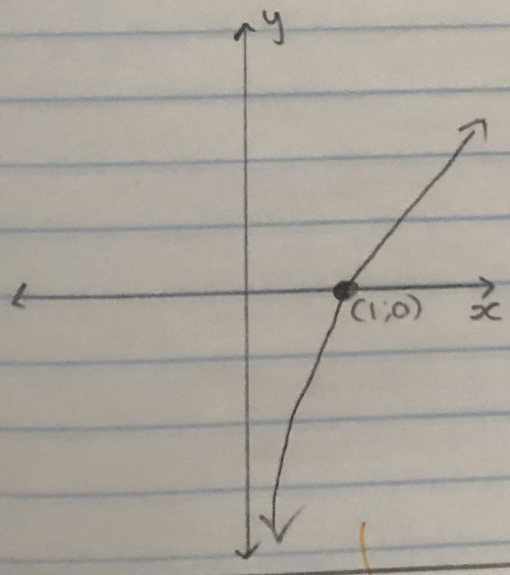
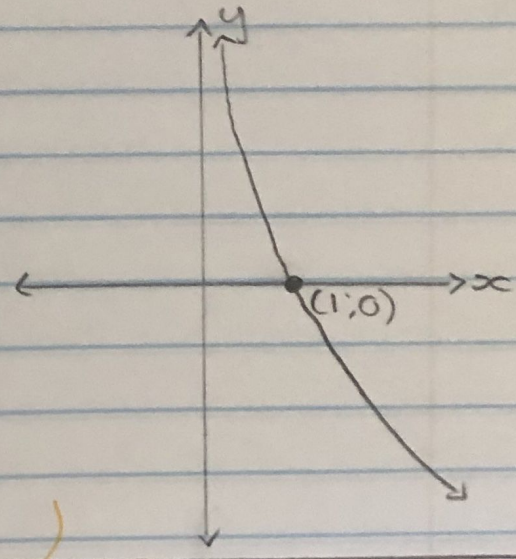
*Let's sketch a few Log and exponential graphs

NB

$y = \log_m x$ → $x \neq 0$

↳ $m > 0$ → can't be (-)

$m \neq 1$

$a > 1$	$0 < a < 1$ ↳ when a is fraction
$y = \log_a x$ (increasing)	$y = \log_a x$ (decreasing)
	

$x = 0$ is the vertical asymptote.

There won't be a y-intercept, since $x \neq 0$!!

Examples:

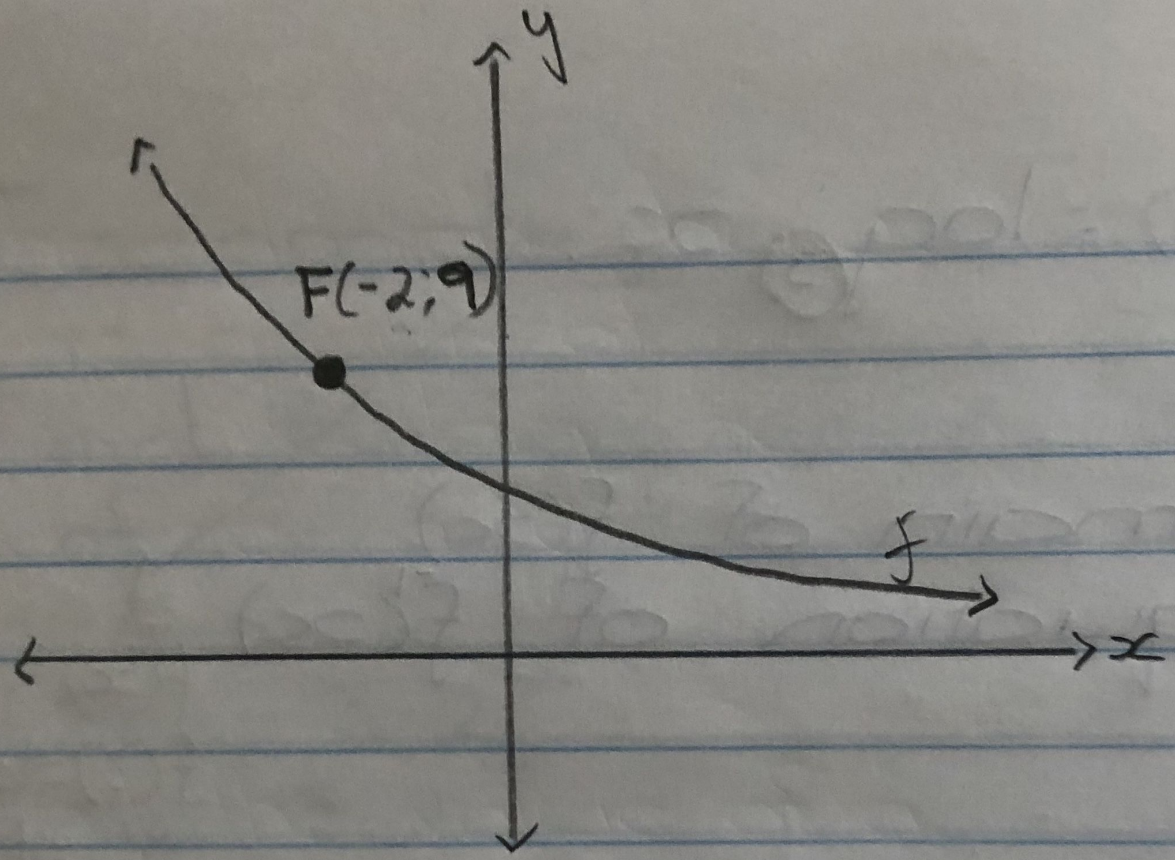
1) Find the equation of the inverse of;

a) $f(x) = 3.2^x$

2) Given: $f(x) = \log_3 x$

a) Sketch $f(x)$
b) Find the domain of $f(x)$
c) Find the equation of $f^{-1}(x)$

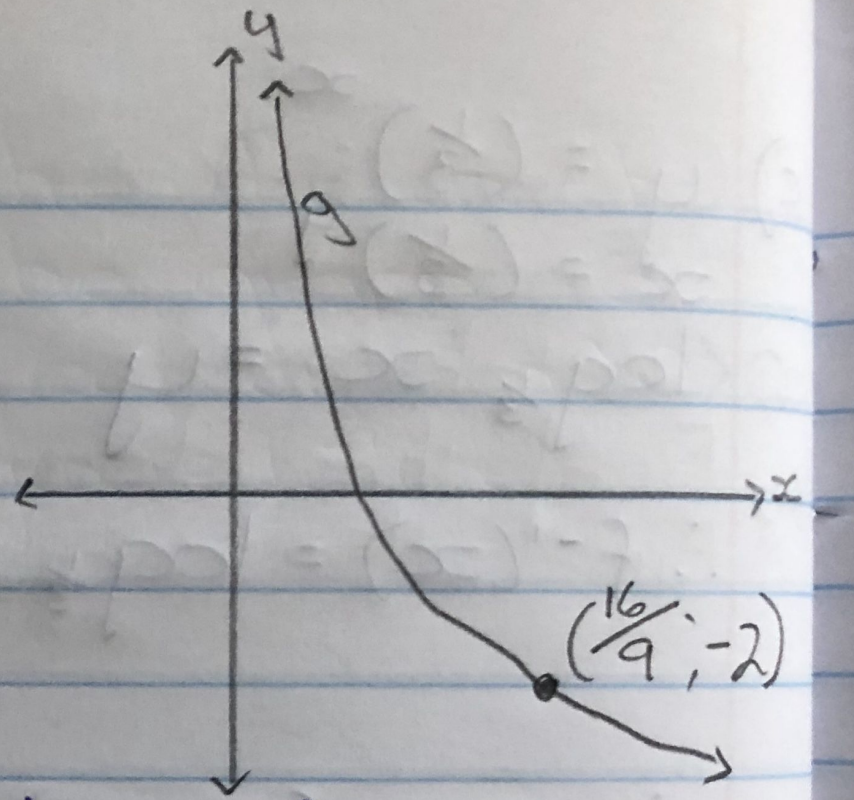
3)



Given:
$f(x) = a^x$,
with $a > 0$

a) find the value of a
b) find the equation of $g(x)$ if
$g(x) = f(-x)$
c) find the equation of the inuerse
$f^{-1}(x)$, and write down its domain

4) The sketch shows the graph of $g(x) = \log_a x$, where $a > 0$



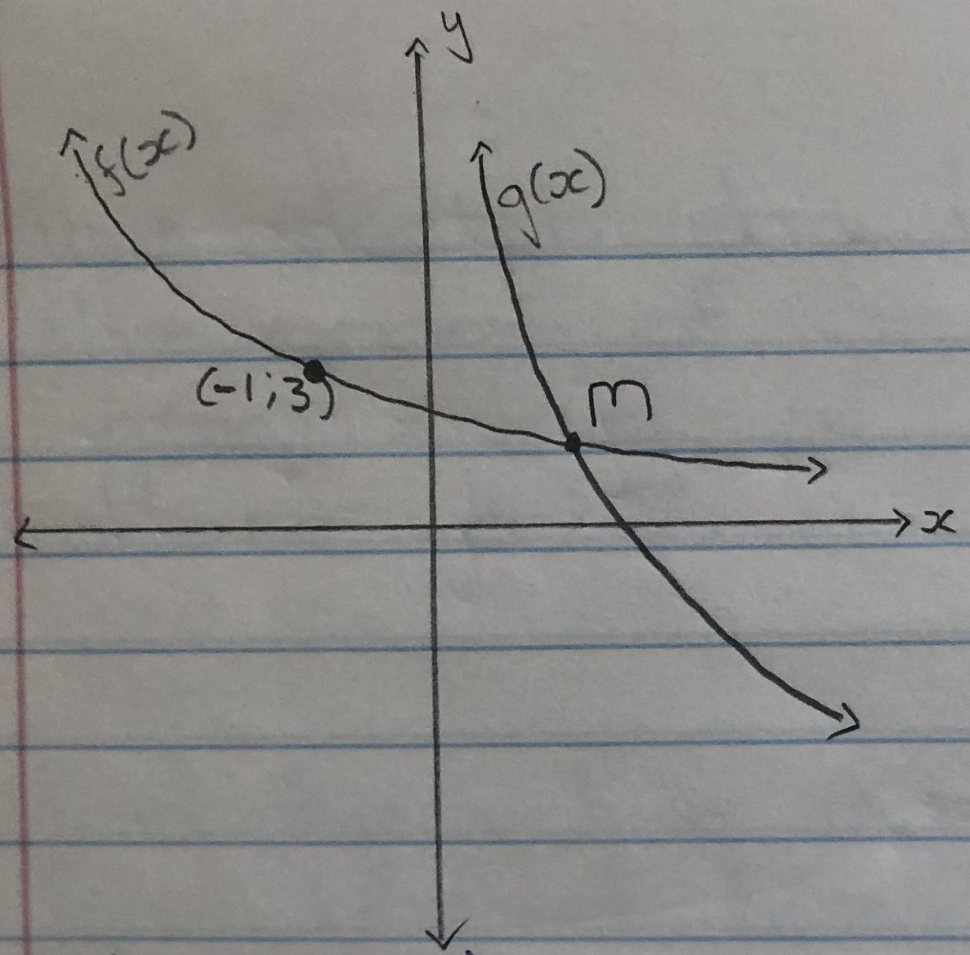
a) find the value of a

b) find $h(x)$ if $h(x)$ is the reflection of $g(x)$ in y-axis.

c) use the graph to find the values of $g(x) \geq \frac{16}{9}$

d) Find the range of $g^{-1}(x)$.

5)



The sketch shows the graphs of $f(x) = a^x$, $a > 0$
$g(x) = f^{-1}(x)$

a) Show that $a = \frac{1}{3}$
b) find the equation of $g(x)$