

## LECTURE NOTES: §1.5

1. Without doing a bunch of algebra, find  $f^{-1}(x)$  for each function below:

(a)  $f(x) = 2x$

(b)  $f(x) = x^3$

2. Without explicitly finding a formula for  $f^{-1}(x)$ , find  $f^{-1}(1)$  for each function below:

(a)  $f(x) = x - 20$

(b) 

$x$	0	0.25	0.5	0.75	1	1.25	1.5	1.75	2.0
$f(x)$	20	10	5	3	2.5	2	1.5	1	0.25

3. Evaluate  $\sin^{-1}(1)$ .

4. Find the exact value of each expression.

(a)  $\log_2 16$

(b)  $e^{\ln 5}$

5. Solve each equation below for  $x$ .

(a)  $10 = 2e^{x+1}$

(b)  $\ln(x^2 - 1) = 1$

6. Sketch each function. Include domain, range, intercepts and asymptotes.

(a)  $f(x) = \ln(x + 1)$

(b)  $f(x) = -\ln x$

