

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)	<table border="1"><tr><td>x</td><td>0</td><td>0.25</td><td>0.5</td><td>0.75</td><td>1</td><td>1.25</td><td>1.5</td><td>1.75</td><td>2.0</td></tr><tr><td>$f(x)$</td><td>20</td><td>10</td><td>5</td><td>3</td><td>2.5</td><td>2</td><td>1.5</td><td>1</td><td>0.25</td></tr></table>	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
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) $e^{\ln 5}$

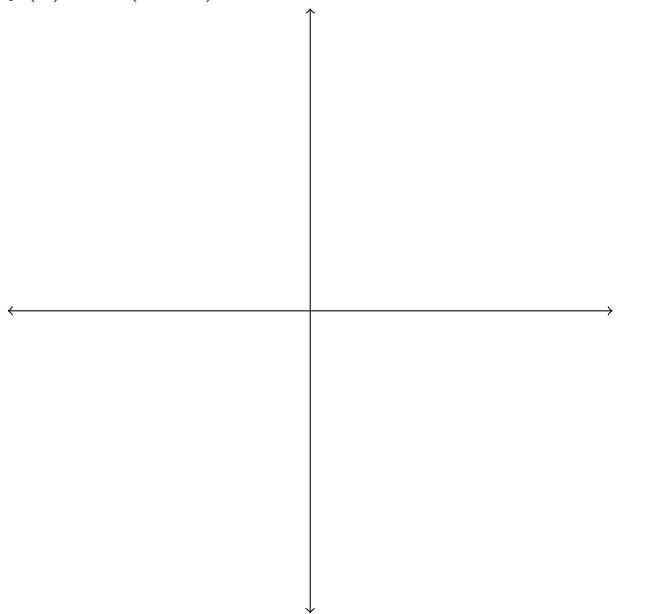
5. Solve each equation below for x .

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

