

AP Precalculus
Unit 3 Worksheet A

Name: _____
Evaluating Inverse Functions

The table below gives values for f , g , and h . Use the given information to evaluate each expression.

x	$f(x)$	$g(x)$	$h(x)$
-4	4	-3	-4
-3	-3	-1	4
-2	0	-4	-3
-1	-1	4	3
0	2	0	-2
1	-4	3	2
2	3	-2	-1
3	1	2	1
4	-2	1	0

1. $f \circ g(3)$

6. $h(-3)h^{-1}(1)$

2. $h^{-1}(-2)$

7. $f^{-1} \circ f(15)$

3. $f^{-1} \circ g^{-1}(0)$

8. $(f \circ g)^{-1}(4)$

4. $f^{-1} + g(-2)$

9. $\frac{g \circ f(3)}{f^{-1}(-2)}$

5. $f \circ g \circ h(-1)$

10. $g^{-1} \circ [g + f] \circ h^{-1}(-1)$

Use each of the given functions to find the indicated value.

11. If $f(x) = x^3 - 7x^2 - 8x + 5$, evaluate $f^{-1}(5)$. will factor

12. If $g(x) = x^3 + 3x^2 - 4x - 10$, evaluate $g^{-1}(2)$. will factor

13. If $h(x) = x^3 + 2x^2 - 6x - 3$, evaluate $h^{-1}(6)$. Requires Rational Root Theorem and Synthetic Division which is not required in Unit 3, but will be later in the year.

14. If $j(x) = 2x^3 + x^2 - 6x + 1$, evaluate $j^{-1}(9)$. Requires Rational Root Theorem and Synthetic Division which is not required in Unit 3, but will be later in the year.

15. If $k(x) = 2x^4 - 9x^2 - 1$, evaluate $k^{-1}(-8)$. hint: $x^4 = (x^2)^2$ so this factors