Name Key Date _____ Pd ____

5.6 Inverse Functions DAY TWO CYU

☑ *Use when you get it right all by yourself*

S *Use when you did it all by yourself, but made a silly mistake*

H *Use when you could do it alone with a little help from teacher or peer*

G *Use when you completed the problem in a group*

X *Use when a question was attempted but wrong (get help)*

N *Use when a question was not even attempted*

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Determining if functions are inverses		1 - 6	
Find the inverse of the function	7, 10	8, 11	9, 12
Graphing functions & inverses	10	11	12
Modeling with mathematics		13	

State if the given functions are inverses.

1. $g(x) = 4 - \frac{3}{2}x$

$f(x) = \frac{1}{2}x + \frac{3}{2}$

no

2. $f(n) = \frac{-16 + n}{4}$

$g(n) = 4n + 16$

yes

3. $g(n) = \frac{-12 - 2n}{3}$

$f(n) = \frac{-5 + 6n}{5}$

no

4. $f(n) = 2(n-2)^3$

$g(n) = \frac{4 + \sqrt[3]{4n}}{2}$

yes

5. $f(n) = -(n+1)^3$

$g(n) = 3 + n^3$

no

6. $g(x) = -\frac{2}{x} - 1$

$f(x) = -\frac{2}{x+1}$

yes

Find the inverse of each function.

7. $g(x) = \frac{1}{x} - 2$

$g^{-1}(x) = \frac{1}{x+2}$

8. $g(x) = \frac{7x + 18}{2}$

$g^{-1}(x) = \frac{2x - 18}{7}$

9. $h(x) = 2x^3 + 3$

$h^{-1}(x) = \sqrt[3]{\frac{x-3}{2}}$

Find the inverse of each function. Then graph the functions and its inverse. Label both.

10. $f(x) = -1 - \frac{1}{5}x$

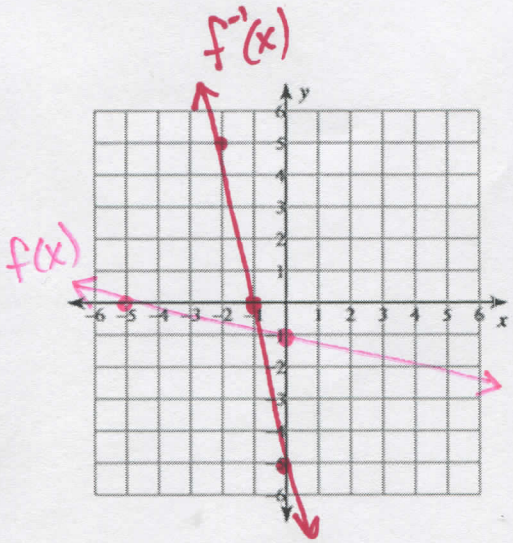
11. $g(x) = \frac{-x-5}{3}$

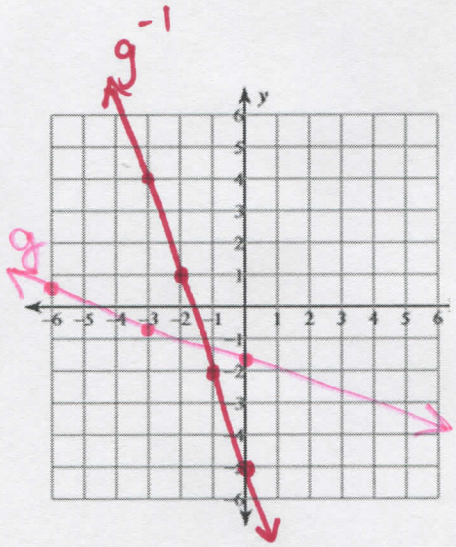
12. $f(x) = -2x^3 + 1$

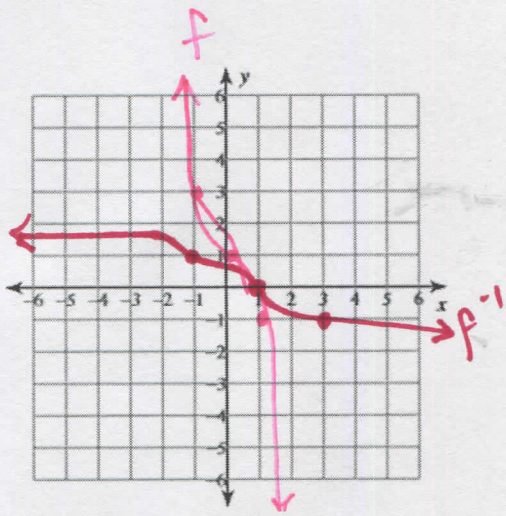
$f^{-1}(x) = -5x - 5$

$g^{-1}(x) = -3x - 5$

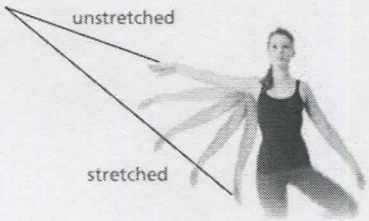
$f^{-1}(x) = \sqrt[3]{\frac{-x+1}{2}}$







13. **MODELING WITH MATHEMATICS** Elastic bands can be used for exercising to provide a range of resistance. The resistance R (in pounds) of a band can be modeled by $R = \frac{3}{8}L - 5$, where L is the total length (in inches) of the stretched band. Find the inverse function. What length of the stretched band provides 19 pounds of resistance?



$L = \frac{8}{3}R + \frac{40}{3}$; ≈ 64 in

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

1 2	3 4 5	6 7	8
Basic	Intermediate	Advanced	Solved ALL!