

5.6 Inverse Functions DAY ONE 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
Solving for x	1	2	3
Finding inputs given an output	1	2	3
Inverse of functions	4, 10	5, 11	6, 12, 13
Graphing functions & Inverses	4	5	6
Graphing with domain restrictions	7	8	9
Determine if functions are inverses			14, 15
Horizontal Line Test	10	11	12, 13
Real-World Application	16		

Solve $y = f(x)$ for x . Then find the input(s) when the output is -3 .

1. $f(x) = 3x^3$

2. $f(x) = 2x^4 - 5$

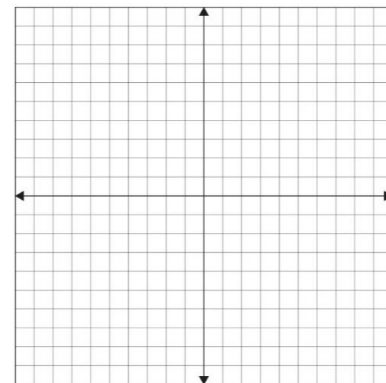
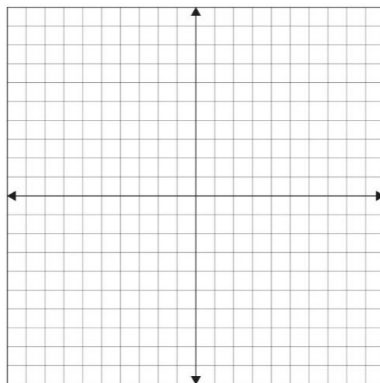
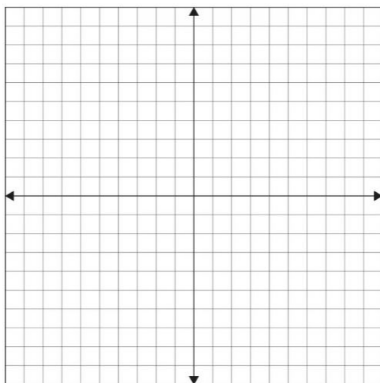
3. $f(x) = (x - 5)^3 - 1$

Find the inverse of the function. Then graph the function and its inverse.

4. $f(x) = 6x$

5. $f(x) = \frac{1}{3}x - 1$

6. $f(x) = -\frac{4}{5}x + \frac{1}{5}$

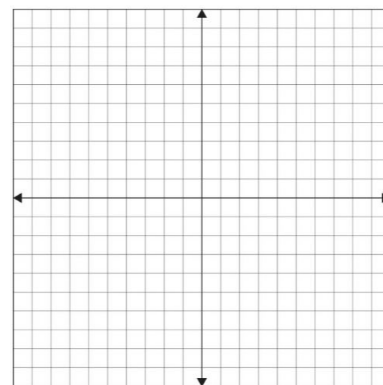
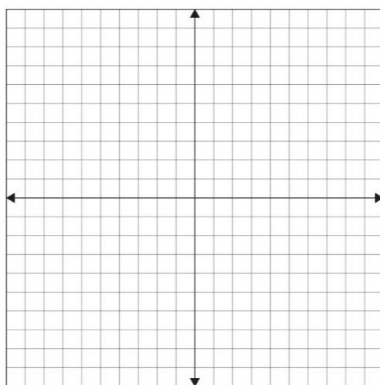
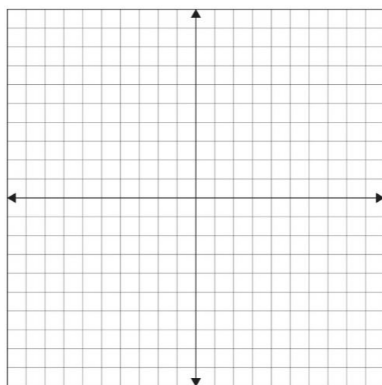


Find the inverse of the function. Then graph the function and its inverse.

7. $f(x) = 4x^2, x \leq 0$

8. $f(x) = (x + 4)^3$

9. $f(x) = -x^6, x \geq 0$



Determine whether the inverse f is a function. Then find the inverse.

10. $f(x) = \sqrt{x+4}$

11. $f(x) = -3\sqrt[2]{\frac{4x-7}{3}}$

12. $f(x) = \frac{1}{2}x^5$

13. $f(x) = -\sqrt[3]{\frac{2x+4}{3}}$

Determine whether the functions are inverses.

14. $f(x) = 2x - 9$ & $g(x) = \frac{x}{2} + 9$

15. $f(x) = \sqrt[5]{\frac{x+9}{5}}$ & $g(x) = 5x^5 - 9$

16. **MODELING WITH MATHEMATICS** The maximum hull speed v (in knots) of a boat with a displacement hull can be approximated by $v = 1.34\sqrt{l}$, where l is the waterline length (in feet) of the boat. Find the inverse function. What waterline length is needed to achieve a maximum speed of 7.5 knots?



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.

