Name: _____ Date: _____ Period: _____

4.7 Transformation with Polynomial 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*

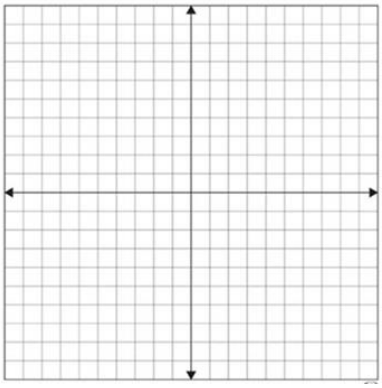
X *Use when a question was attempted but wrong (get help)*

N *Use when a question was not even attempted*

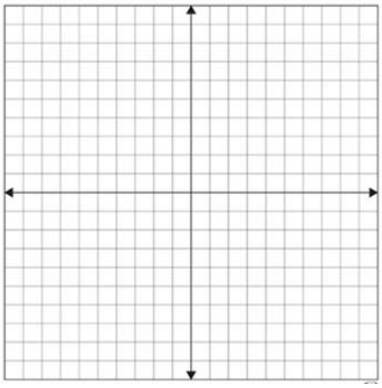
CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Describe transformations	1	2 - 4	5, 6
Writing a function from a rule			7 – 10
Graphing functions	1	2 - 4	5, 6
Describing graphs		7 - 10	
Writing a function from descriptions			

Describe the transformation of f represented by g. Then graph each function.

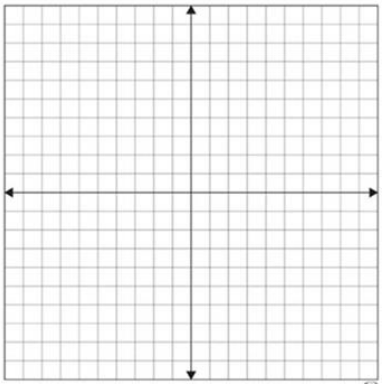
1. $f(x) = x^4$, $g(x) = x^4 + 3$



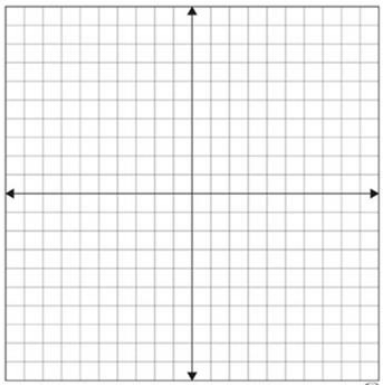
2. $f(x) = x^5$, $g(x) = (x - 2)^5 - 1$



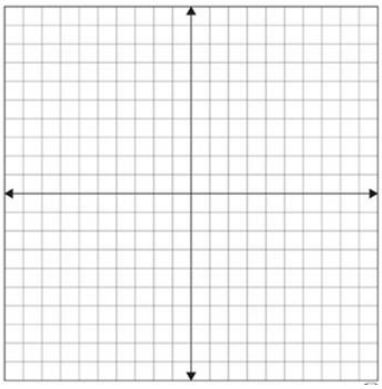
3. $f(x) = x^6$, $g(x) = (x + 1)^6 - 4$



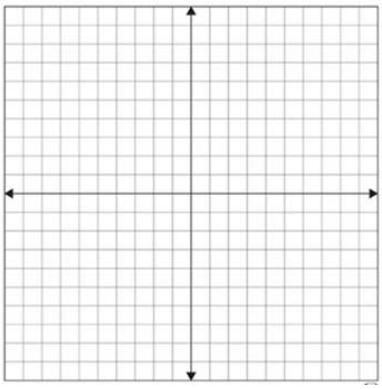
4. $f(x) = x^4$, $g(x) = -2x^4$



5. $f(x) = x^3$, $g(x) = 5x^3 + 1$

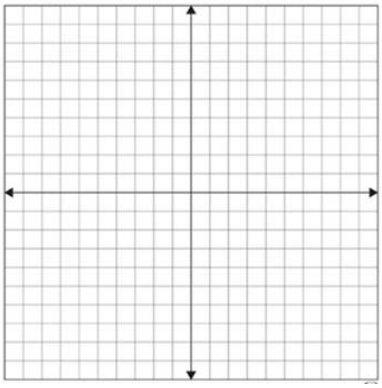


6. $f(x) = x^4$, $g(x) = (2x)^4 - 3$

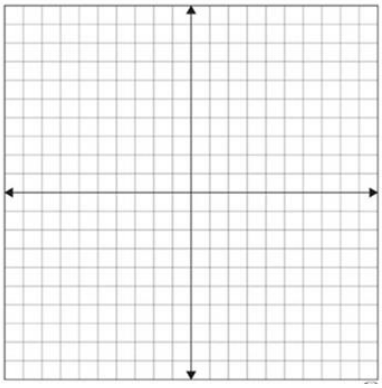


Write the function for g given its rule, and then graph each function. Describe the graph of g as a transformation of the graph of f.

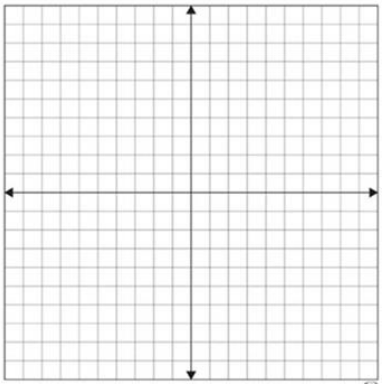
7. $f(x) = x^4 + 1$, $g(x) = f(x + 2)$



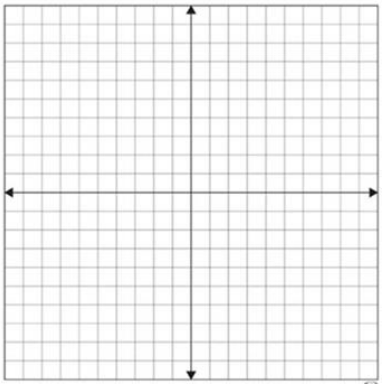
8. $f(x) = x^5 - 2x + 3$, $g(x) = 3f(x)$



9. $f(x) = 2x3 - 2x2 + 6, g(x) = -\frac{1}{2}f(x)$



10. $f(x) = x^4 + x^3 - 1$, $g(x) = f(-x) - 5$



Write a rule and a function that represents the indicated transformation of the graph of f.

11. $f(x) = x^3 - 6$; translation 3 units left, followed by a reflection over the y-axis.

12. $f(x) = x^4 + 2x + 6$; vertical sketch by a factor of 2, followed by a translation 4 units right.

13. $f(x) = x^3 + 2x^2 - 9$; horizontal compression by a factor of $\frac{1}{3}$ and a translation 2 units up, followed by a reflection over the x-axis.

14. $f(x) = 2x^5 - x^3 + x^2 + 4$; reflection over the y-axis and a vertical sketch by a factor of 3, followed by a translation 1 unit down.

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.