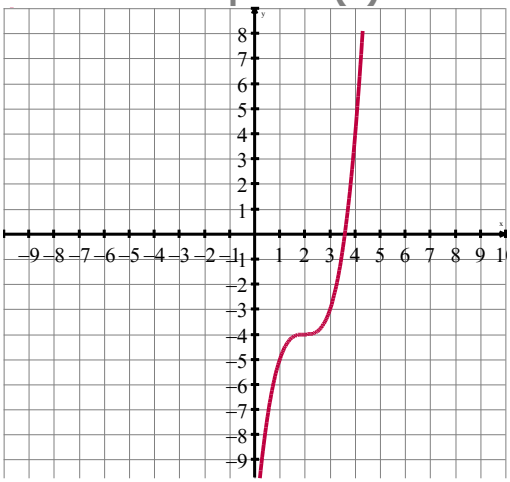
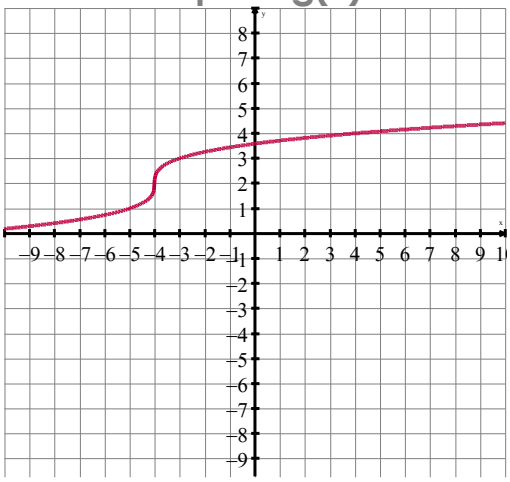
Transformations of Cubic and Cube Root Functions Name: _____

Graph of f(x)



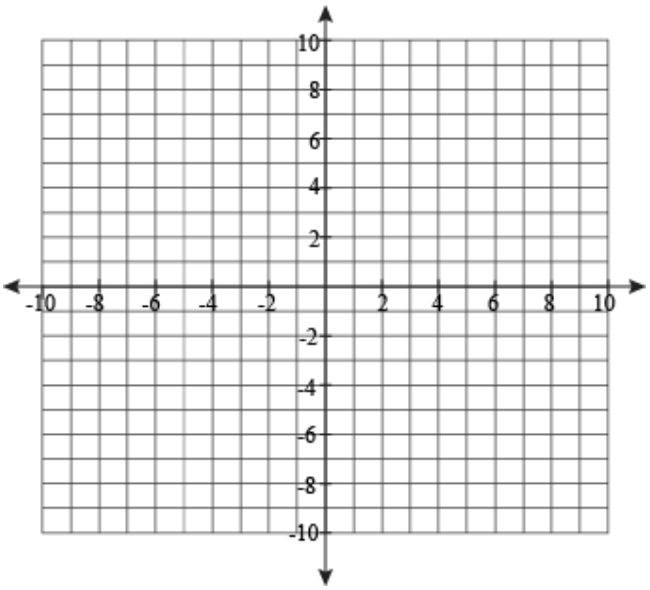
Graph of g(x)



The following are examples and non-examples of the two graphs shown above. Write "T" in the blank if the statement is true. Write "F" in the blank in the statement is false. Provide a justification in writing to explain each false statement.

Examples and Non-examples	Justification
____**1.** *f(x) is a cube root function and g(x) is a cubic function.*	
____**2.** *f(x) has been shifted 2 units right and 4 units down*	
____**3.** *The transformation –f(x) is applied to create the function j(x). The increasing interval for j(x) is the same as the increasing interval for f(x).*	
____**4.** *f(x) was reflected either vertically or horizontally to create the graph shown above.*	
____**5.** *The transformation g(x + 2) is applied to create the function h(x). The y-intercept of h(x) is greater than the y-intercept of g(x).*	
____**6.** *A possible equation for f(x) as graphed above is* $f(x) = (x+2)^3 - 4$.	
____**7.** *g(x) has been stretch vertically by a factor of 2.*	
____**8.** *The transformation ½f(-x) is applied to create the function k(x). The x-intercept of k(x) is greater than the x-intercept of f(x).*	
____**9.** *A possible equation for g(x) as graphed above is* $g(x) = \sqrt[3]{(x+4)} + 2$.	
____**10.** *f(x) and g(x) are inverses.*	

11) $f(x) = -\frac{1}{2}\sqrt[3]{x+4} + 1$



Vertex: _____

Increasing: _____ Decreasing: _____

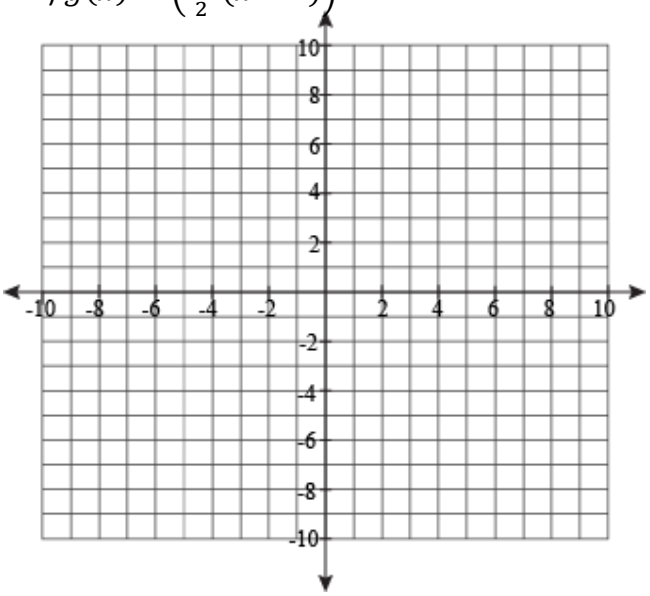
Domain: _____ Range: _____

End behaviors:_____ _____

Transformations: _____

_____

12) $g(x) = \left(\frac{-1}{2}(x-2)\right)^3 - 4$



Vertex: _____

Increasing: _____ Decreasing: _____

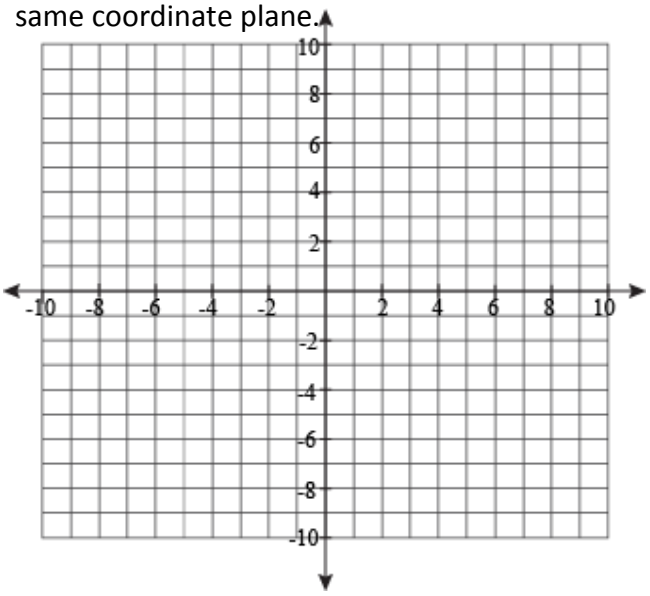
Domain: _____ Range: _____

End behaviors:_____ _____

Transformations: _____

_____

13) Graph $f(x) = -\frac{1}{2}x^3 - 3$. Find the inverse $f^{-1}(x)$ and graph it on the same coordinate plane.



Write the transformations for f(x):

_____

_____

Write the transformations of $f^{-1}(x)$:

_____

_____

Compare the transformations between f(x) and f-1(x):

_____

_____