Math 3H Name _____

Transformations Period _____

Part I

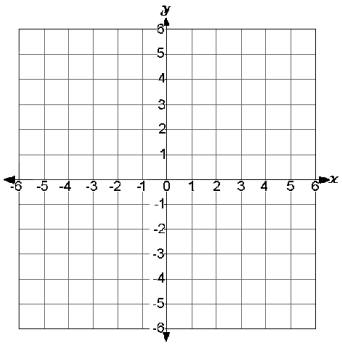
Describe the transformations applied to f(x) to create g(x).

1. $g(x) = f(x-2)+3$
2. $g(x) = \frac{1}{2} f(x) - 4$
3. $g(x) = -3f(x+6)$
4. $g(x) = f(x-2)-6$
5. $g(x) = 5f(x+1)-2$
6. $g(x) = -\frac{1}{3} f(x-1)+9$
7. $g(x) = -\frac{3}{2} f(x)$
8. $g(x) = -2f(x)+5$
9. $g(x) = f(x-3)+4$

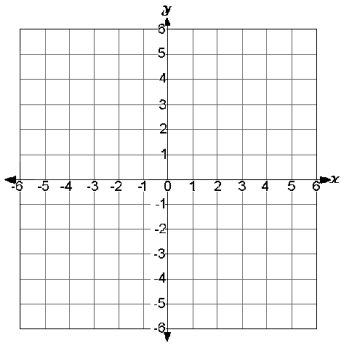
Part II

Graph each function. Identify the vertex or point of origin, the domain and the range, and the symmetry.

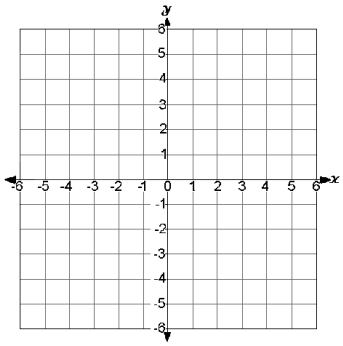
10. $f(x) = -x^2 + 6$



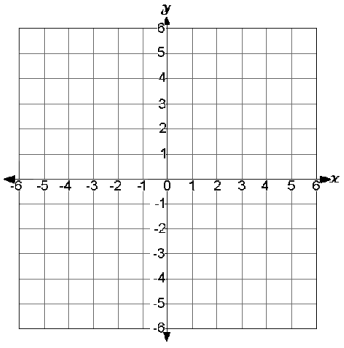
11. $f(x) = (x+2)^2 - 4$



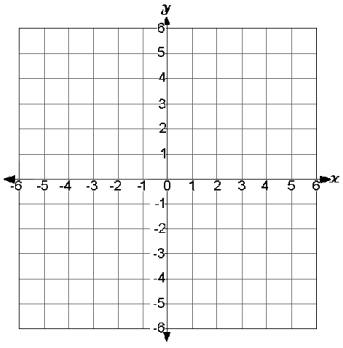
12. $f(x) = -\frac{1}{2}(x-1)^2$



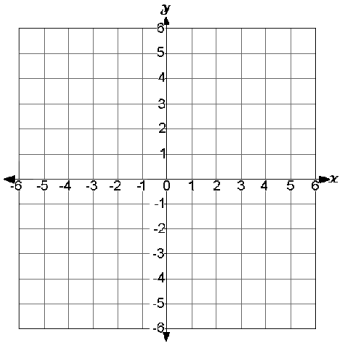
13. $f(x) = 2|x| - 5$



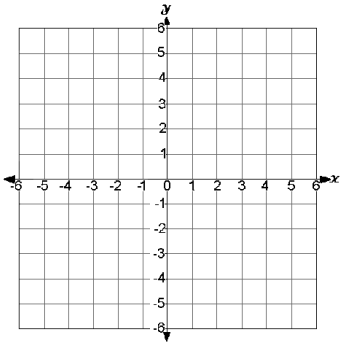
14. $f(x) = |x-3| + 1$



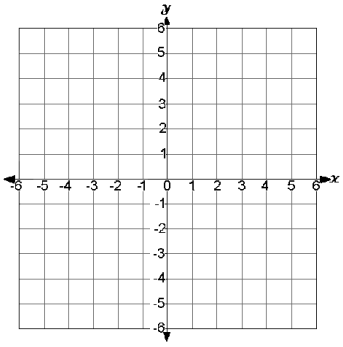
15. $f(x) = \frac{3}{2}|x+4|$



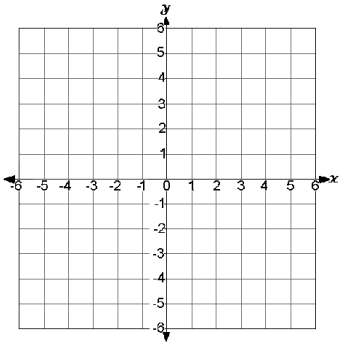
16. $f(x)=(x-2)^3-6$



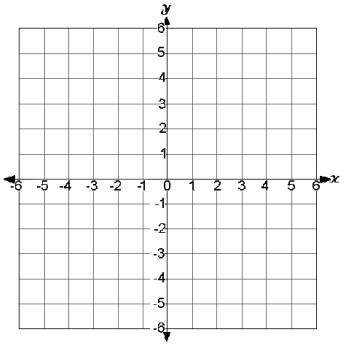
17. $f(x)=-2(x-1)^3-3$



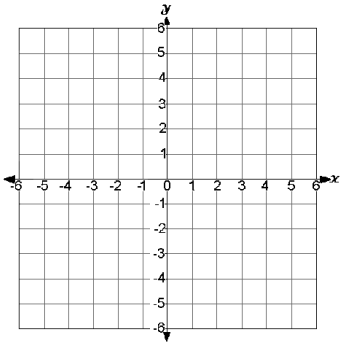
18. $f(x)=-\frac{1}{2}x^3+2$



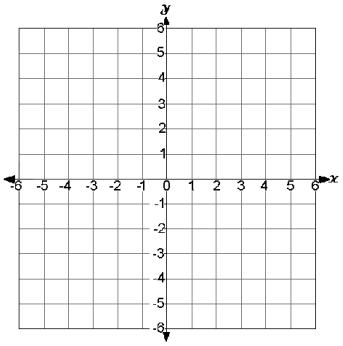
19. $f(x)=5\sqrt{x+6}-4$



20. $f(x)=3\sqrt{x}-4$



21. $f(x)=-\frac{3}{2}\sqrt{x-3}$

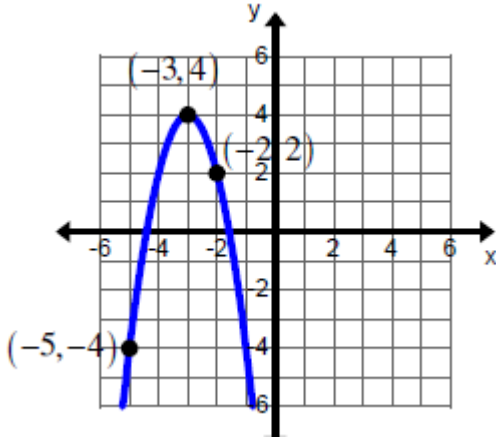


Part III

Determine the transformations that were used to change the given parent function to the function that is graphed. Write the equation of the graphed function.

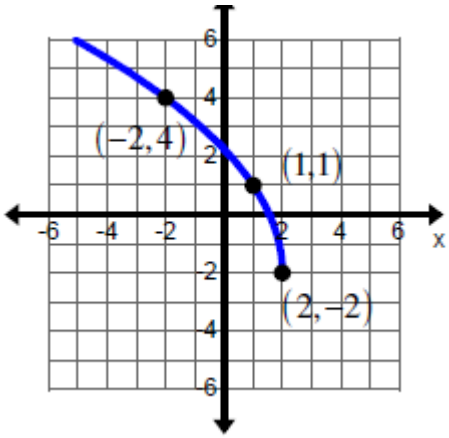
22. $f(x)=x^2$

$g(x)=$



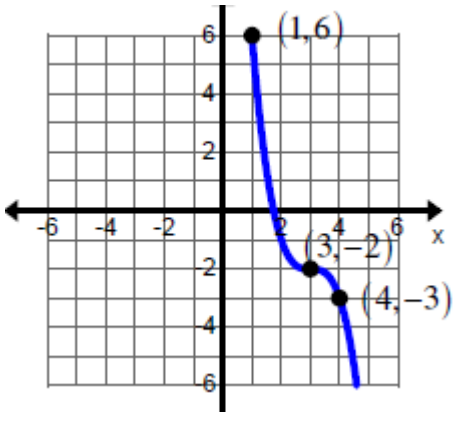
23. $f(x)=\sqrt{x}$

$g(x)=$



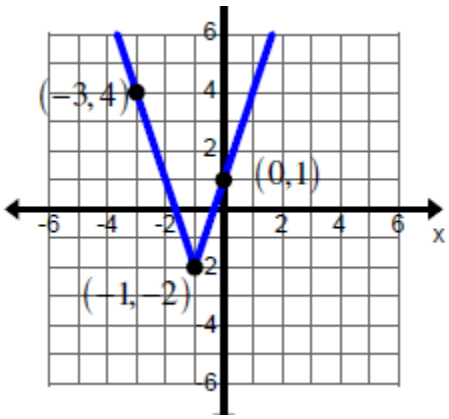
24. $f(x)=x^3$

$g(x)=$



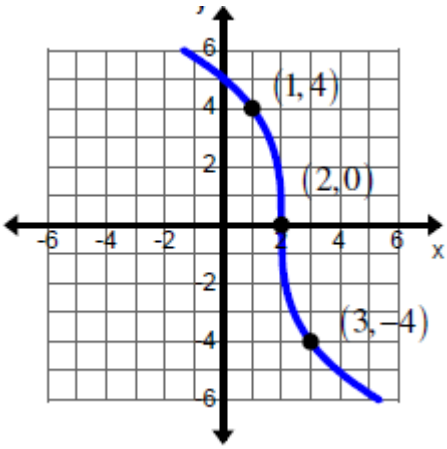
25. $f(x)=|x|$

$g(x)=$



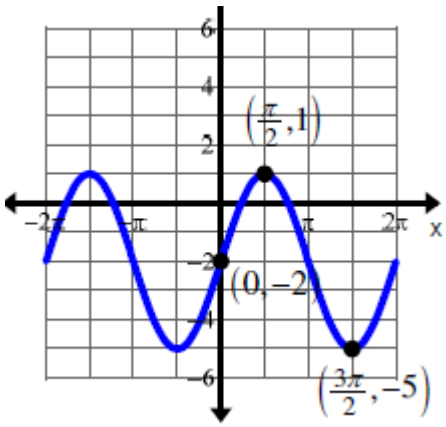
26. $f(x)=\sqrt[3]{x}$

$g(x)=$



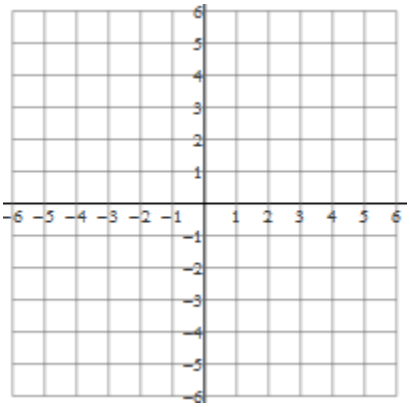
27. $f(x)=\sin(x)$

$g(x)=$

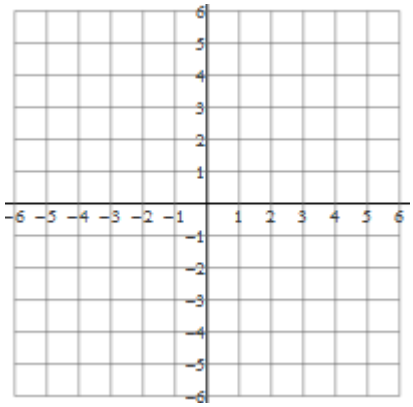


Graph the piecewise function.

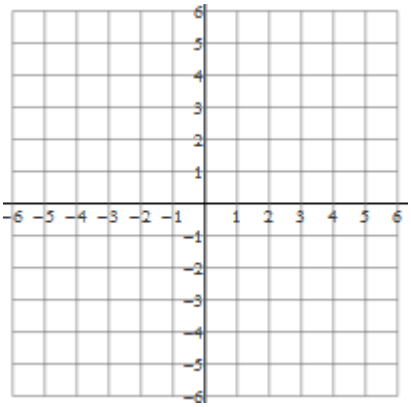
28. $\begin{cases} x^2-4x, x<0 \\ x^2, x\geq 0 \end{cases}$



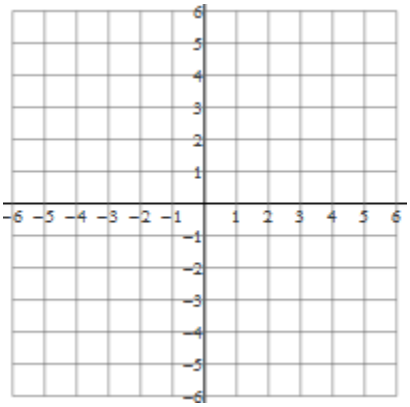
29. $\begin{cases} x+3, x<-1 \\ 4-x^2, x\geq -1 \end{cases}$



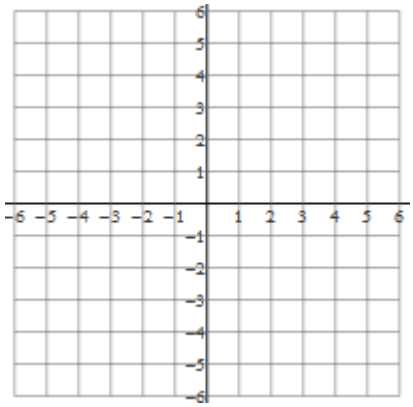
30. $\begin{cases} -4^x, x<0 \\ 4-x^2, x\geq 0 \end{cases}$



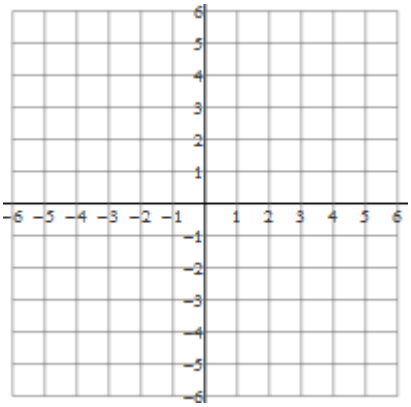
31. $\begin{cases} \sqrt{-3x}, x\leq -3 \\ -2x-1, -3<x<1 \\ -2x+4, x\geq 1 \end{cases}$



32. $\begin{cases} \sqrt{x+3}, x<-1 \\ -x+2, -1\leq x\leq 4 \\ (x-5)^4, x>4 \end{cases}$



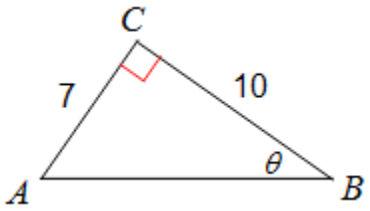
33. $\begin{cases} -2x-4, x<-2 \\ x^2, -2\leq x\leq 2 \\ (x+3)^4, x>2 \end{cases}$



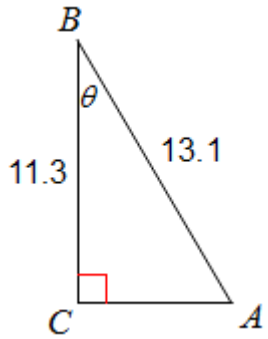
DON'T FORGET THE BACK SIDE.

Find the missing angle.

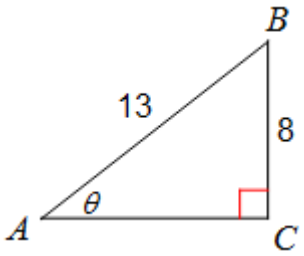
34.



35.



36.



Perform the indicated operation.

37. $\frac{5}{2a^2} - \frac{1}{a} = \frac{a+2}{4a^2}$

38. $-5\sqrt{\frac{m}{2}} = -25$