Algebra II Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Cubic/Cube Root Review Period\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Graph each equation*

1. 2. 3.

$f\left(x\right)=\left(x+2\right)-3$ $g\left(x\right)=2(x)^{3}-1$ $h\left(x\right)=-27\left(\frac{1}{3}x-1\right)^{3}+1$

*List* ***ALL*** *transformations*

4. 5. 6.

$f\left(x\right)=-2\left(-x+1\right)^{3}-5$ $g\left(x\right)=\frac{1}{8}(x+4)^{3}+9$ $h\left(x\right)=-\left(\frac{2}{3}x-4\right)^{3}+2$

*Write the inverse of each function*

6. 7. 8.

$f\left(x\right)=4(x-5)^{3}-8$ $g\left(x\right)=-\left(-4\left(x+3\right)\right)^{3}+3$ $h\left(x\right)=-2\sqrt[3]{x+1}-6$

*Graph the inverse of each function*

9. 10. 11.

$f\left(x\right)=(x-5)^{3}+1$ $g\left(x\right)=-\left(x+1\right)^{3}-2$ $h\left(x\right)=(\frac{1}{2}x-2)^{3}$

*Prove by composition*

12. 13. 14.

$f\left(x\right)=\frac{1}{2}x^{3}-7$ $f\left(x\right)=2\left(x-9\right)^{3}$ $f\left(x\right)=\left(\frac{1}{2}x-3\right)^{3}$

$g\left(x\right)=\sqrt[3]{2x+14}$ $g\left(x\right)=\frac{1}{2}\sqrt[3]{x+9}$ $g\left(x\right)=2\sqrt[3]{x}+6$

*Solve for x and check your solution*

15. 16. 17.

$3\sqrt[3]{x}=12$ $\sqrt[3]{4x}+3=67$ $(7x+15)^{\frac{1}{3}}=1$

18. 19. 20.

$\sqrt[3]{(3x+8)^{2}}=1$ $\sqrt[3]{x^{2}-5x+5}-\sqrt[3]{x}=0$ $\sqrt[3]{2x+10}=\sqrt[3]{8x-8}$