

IM 3**Chapter 6 Review 2**

Name: _____ Per: _____ Date: _____

Show All work in the space provided. Write radicals in Simplest Radical Form.**Multiply.**

1. $(-3+5\sqrt{6})(-4-2\sqrt{3})$

2. $(4+2\sqrt{2})(5-4\sqrt{2})$

Solve. Be sure to check for extraneous solutions.

3. $3+\sqrt{2x-3}=8$

4. $3(x+1)^{\frac{2}{3}}=12$

5. $\sqrt{x+7}-5=x$

6. $3(x+3)^{\frac{2}{3}}=27$

Let $f(x) = 2x - 6$ and, $g(x) = \frac{1}{2}x + 3$. Find the following.

7. $(f - g)(x) =$

8. $(f \bullet g)(x) =$

9. $(f + g)(x) =$

10. Find $\left(\frac{g}{f}\right)(x)$, then state its domain.

11. $f(g(x)) =$

12. $g(f(x)) =$

13. Find the inverse of $f(x)$.14. Find the inverse of $g(x)$.

Let $f(x) = \sqrt{x^3}$ and, $g(x) = \sqrt[3]{x^5}$. Find the following. State the domain of the new function.

Rationalize any denominators, and write radicals in simplest form.

15. $(f - g)(x) =$	16. $(f \bullet g)(x) =$
17. $(f + g)(x) =$	18. Find $\left(\frac{f}{g}\right)(x)$, then state its domain.
19. $f(g(x)) =$	20. $g(f(x)) =$
21. Find the inverse of $f(x)$.	22. Find the inverse of $g(x)$.

23. Graph $f(x) = \sqrt{x-4} + 3$ and $g(x) = -\sqrt{x-4} + 3$ on the same graph. State the domain and range of each function as well as the transformation from its parent function for each function.

