Algebra II Test – Chapter 5 REVIEW Name: _____

Multiple Choice: Place your answer on the line provided. /

_____ **1.** Find the following $f(x) - g(x)$if $f(x) = 2x^2 - 3x + 10$ and $g(x) = -3x^2 - 5x - 11$

_____ 2. Find $f(x)g(x)$if $f(x) = 9x^2 + 5x + 3$ and $g(x) = -3x^2$

_____ 3. Simplify $\left(\frac{x^{-4}y}{z^{-5}}\right)^{-4}$

4. Simplify $-5\sqrt{3} + \sqrt{4} - (\sqrt{3} + 7\sqrt{2})$

5. Simplify $5\sqrt{27} + 6\sqrt{3} - 4\sqrt{48}$

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

7. Factor $(\sqrt{\mathbf{5}\boldsymbol{x}}-\mathbf{5})(\mathbf{2}\sqrt{\boldsymbol{x}}+\mathbf{5}\sqrt{\boldsymbol{y}})$

8. Find the reduced radical form of the following: $\frac{3}{2-\sqrt{5}}$

9. Solve the radical equation: $\sqrt[3]{\boldsymbol{x^2+4}}-\mathbf{2}=0$

10. Find the following: $\boldsymbol{f}\big(\boldsymbol{g}(-\mathbf{3})\big)$ **if** $\boldsymbol{f}(\boldsymbol{x})=\mathbf{2}\boldsymbol{x}^{\mathbf{2}}-\mathbf{5}\boldsymbol{x}-\mathbf{3}$ **and** $\boldsymbol{g}(\boldsymbol{x})=\mathbf{7}\boldsymbol{x}+\mathbf{2}$

11. Find the following: $\boldsymbol{f}(\boldsymbol{x})\cdot\boldsymbol{g}(\boldsymbol{x})$ **if** $\boldsymbol{f}(\boldsymbol{x})=\mathbf{4}\boldsymbol{x}^{\mathbf{2}}-\mathbf{2}$ **and** $\boldsymbol{g}(\boldsymbol{x})=\mathbf{5}\boldsymbol{x}^{\mathbf{3}}-\mathbf{4}$

12. Complete the following: $g \circ f$ if $f(x) = 4x + 3$ and $g(x) = -2x^2 + 3$

13. Find the inverse of the function: $f(x) = \frac{4x+3}{2x+5}$

14. Use composition to determine whether *f* and *g* are inverses.

$f(x) = 3x + 8$ and $g(x) = \frac{x+8}{3}$

15.*)* Use the following set of point to find the inverse and determine if the inverse is a function or not:
$\{(-11,9), (-2,-3), (-3,2), (-7,8), (10,-2)\}$