

Beginning Algebra

Name: _____

Study Guide 14

Class: _____

Due Date: _____

Score: _____

No Work $\Leftrightarrow$ No Points

Use Pencil Only $\Leftrightarrow$ Be Neat & Organized

1. (2 points) Simplify: $(2x^3 + x^2)^2$

1. _____

2. (2 points) Simplify: $(3x^6 - 2y^4)^2$

2. _____

3. (2 points) Simplify: $(5x^3 + 4x)(5x^3 - 4x)$

3. _____

4. (2 points) Divide: $\frac{24x^{10} - 16x^2}{-4x^3}$

4. _____

5. (3 points) Divide: $\frac{25x^4y - 15x^3y^2 - 10x^2y^3}{10x^2y^3}$

5. _____

6. (3 points) Divide using long division: $\frac{4x^2 - 5x - 26}{x + 2}$

6. _____

7. (3 points) Divide using long division: $\frac{6x^3 - 17x^2 + 14x - 2}{2x - 3}$

7. _____

8. (3 points) Divide using long division: $\frac{4x^3 - 6x + 2}{x - 1}$

8. _____

9. (3 points) Simplify: $(x + 10)^2 + (x - 10)^2$

9. _____

10. (3 points) Simplify: $(2x - 3)^2 - (2x + 3)^2$

10. _____

11. (3 points) Simplify: $(3x - 5)(3x + 5)(9x^2 + 25)$

11. _____

12. (4 points) Simplify: $(x - 1)(x + 1)(x^2 + 1)(x^4 + 1)(x^8 + 1)$

12. _____

13. (3 points) Multiply $5x^3 - 4y^2$ **by its conjugate.**

13. _____

14. (3 points) Find an expression for the perimeter of a triangle whose sides are $2x^2 + 3x - 5$, $-3x^2 + 4x + 10$, and $x^2 - 7x - 4$.

14. _____

15. (3 points) Find an expression for the area of a triangle with base $3x^2 - 5x - 1$, and height of $2x - 4$.

15. _____

16. (4 points) Find an expression for the length of a rectangle with the area of $3x^3 - 14x^2 + 2x + 4$, and width of $3x - 2$.

16. _____

17. (4 points) Find an expression for the width of a rectangle with the area of $4x^2 - 1$, and length of $2x + 1$.

17. _____