Name: _____ **Class:** _____ **Date:** _____ **ID: A**

IM2 - Quadratics & Factoring _ Study Guide

Simplify the sum.

1. $(4u^3 + 4u^2 + 2) + (6u^3 - 2u + 8)$

2. $(5u^3 + 8u^2 + 2) + (7u^3 - 5u^2 + 5)$

Simplify the difference.

3. $(4w^2 - 4w - 8) - (2w^2 + 3w - 6)$

4. $(5w^2 - 5w + 7) - (2w^2 - 8w - 6)$

Simplify the product.

5. $3p^4(4p^4 + 7p^3 + 4p + 1)$

6. $(3x - 7)(3x - 5)$

7. $(4x + 3)(2x + 5)$

8. $(5x + 3)(3x - 4)$

9. $(2x - 6)^2$

10. $(3n^2 + 5n + 4)(3n - 4)$

11. Find the area of the UNSHADED region of the square. Write your answer in standard form.

Factor the polynomial by grouping.

12. $6g^3 + 8g^2 - 15g - 20$

13. $3x^3 + 3x^2 + x + 1$

Factor the trinomials.

14. $12d^2 + 4d - 1$

15. $6x^2 + 5x + 1$

16. $6g^2 + 11g - 35$

17. $d^2 - 14d + 49$

18. $21m^2 - 29m - 10$

Factor the binomial.

19. $r^2 - 49$

20. $49b^2 - 36$

Solve the equation by factoring.

21. $5x^2 + 9x - 2 = 0$

22. $4x^2 + 28x - 32 = 0$

23. $6x^2 - 8x = 0$

24. $x^2 - 8x = 9$

25. $x^2 = 25$