


Name: _____

Date: _____

Topic: _____

Class: _____

Main Ideas/Questions	Notes/Examples	
WARM-UP	Directions: Simplify the following polynomials.	
	<ul style="list-style-type: none">• $(x + 4)(x - 4) = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$• $(5m + 1)(5m - 1) = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$• $(2a + 3b)(2a - 3b) = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$ <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-top: 10px;">This resulting product is called a DIFFERENCE OF SQUARES. </div>	
<i>Steps to Factor a</i> DIFFERENCE OF SQUARES	1 First, make sure you have an actual difference of squares! (Must be a subtraction sign and you can square root both terms)	
	2 Use the following rule to factor: $a^2 - b^2 = \underline{\hspace{2cm}}$	
	3 Check your work by distributing!	
EXAMPLES	Directions: Factor each difference of squares. Check your work by distributing. If a polynomial cannot be factored, write "prime."	
	1. $a^2 - 4$	2. $n^2 - 64$
	3. $81 - x^2$	4. $c^2 - 100$
	5. $k^2 + 25$	6. $1 - 49y^2$
	7. $9b^2 - 100$	8. $25x^2 - 49$
	9. $16a^2 - 121$	10. $x^2 - 81y^2$
	11. $4h^2 - 25g^2$	12. $64u^2 - v^2$

13. $x^2y^2 - 1$

14. $81n^4 - 25$

15. $4c^2 - 5d^2$

16. $49m^4 - 16$

17. $k^6 - 16$

18. $4p^4 - 25$

19. $121r^6 - 1$

20. $64m^4 - 9n^2$

**EXAMPLES
WITH A GCF****Directions:** Look for a GCF first, then factor the remaining difference of squares. Check your work by distributing.

21. $2n^2 - 72$

22. $18x^2 - 50$

23. $32s^2 - 18u^2$

24. $45q^3 - 20q$

25. $24a^2 - 54b^2$

26. $100b^3 - 36b$

27. $80n^4 - 125n^2$

28. $8x^2y - 32y^3$

29. $36p^3 - 9p$

30. $3n^2 - 147$

31. $16k^3 - 100k$

32. $m^3n - mn$