

NAME \_\_\_\_\_ HW # 14

Factor each difference into two binomials ( $a^2 - b^2$ ).

1.  $x^2 - 36$   
 $(x-6)(x+6)$

2.  $a^2 - 400$   
 $(a-20)(a+20)$

3.  $16y^2 - 1$   
 $(4y-1)(4y+1)$

4.  $100x^2 - y^2$   
 $(10x-y)(10x+y)$

5.  $4n^2 - 25$   
 $(2n-5)(2n+5)$

6.  $9a^2 - 64$   
 $(3a-8)(3a+8)$

7.  $81x^4 - 225y^6$   
 $(9x^2-15y^3)(9x^2+15y^3)$

8.  $x^4 - 49$   
 $(x^2-7)(x^2+7)$

9.  $x^8 - 144y^2$   
 $(x^4-12y)(x^4+12y)$

For #'s 10 -13, state whether or not the binomial is factorable. Explain why it is not factorable and if it is factorable, factor it.

10.  $x^2 + 100$   
unfactorable  
(addition)

11.  $4x^{14} - 1$   
 $(2x^7-1)(2x^7+1)$

12.  $16x^1 - 9$   
unfactorable  
(odd exponent)

13.  $y^{25} - 16$   
unfactorable  
(odd exponent)