

DO NOW

Multiply:

1. $(x + 4)(x - 4)$
 $x^2 - 16$

2. $(x - 5)(x + 5)$
 $x^2 - 25$

3. $(2x + 3)(2x - 3)$
 $4x^2 - 9$

7.2 Factoring the Difference of Two Squares

Recall: $(a-b)(a+b) = a^2 - b^2$

Reverse this: $a^2 - b^2 = (a+b)(a-b)$

Recognize the perfect squares:

1, 4, 9, 16, 25, 36, 49, 64, 81,
100, 121, 144, 169, 196, 225...

* Must be a BINOMIAL
with SUBTRACTION and
PERFECT SQUARES

Examples:

1. $m^2 - 25$
 $(m)^2 - (5)^2$
 $(m+5)(m-5)$
(Red arrows: 'a' points to m, 'b' points to 5)

2. $b^2 - 64$
 $(b)^2 - (8)^2$
 $(b+8)(b-8)$

3. $49y^2 - 1$
 $(7y)^2 - (1)^2$
 $(7y+1)(7y-1)$

4. $a^2 - 81$
 $(a+9)(a-9)$

5. $16x^2 - 9$
 $(4x-3)(4x+3)$

6. $x^2 - 144$
 $(x+12)(x-12)$

Mixed Factoring:

7. $4n^2 - 25$
 $(2n+5)(2n-5)$

8. $8d^2 - 24d$
 $8d(d-3)$

9. $p^2 - q^2$
 $(p-q)(p+q)$

10. $15g^4 + 18g^3$
 $3g^3(5g+6)$

11. $m^2 + 100$
PRIME

12. $121b^2 - 49a^2$
 $(11b-7a)(11b+7a)$

13. $25y^2 - 20$
 $5(5y^2 - 4)$

14. $m^2 - 169$
 $(m+13)(m-13)$

HOMEWORK

Worksheet - HW 7.2