Unit V – Second Degree Relations and Higher - Polynomials
Part C – Solving Equations and Inequalities by Factoring
Lesson 3 – Special Products Difference of Squares

Find the indicated product for each of the following.

1. $(2x+7)(2x-7)$
2. $(6x+5a)(6x-5a)$
3. $(n+11)(n-11)$
4. $(4y-5)(4y+5)$
5. $(7x-3)(7x+3)$
6. $\left(6c-5d^2\right)\left(6c+5d^2\right)$
7. $\left(2a^2-6\right)\left(2a^2+6\right)$
8. $(5ab-2)(5ab+2)$
9. $\left(3m^2+4n\right)\left(3m^2-4n\right)$

Solve the following polynomial equations by recognizing the polynomials as the difference of two perfect squares and by knowing that each can be rewritten as a product of two binomials, one a sum and the other a difference.

10. $y^2=16$
11. $4c^2-9=0$
12. $49-36d^2=0$
13. $25c^2=9$
14. $9=81y^2$
15. $1-4x^2=0$
16. $^{-}4x^2+25=0$
17. $\frac{1}{4}x^2-9=0$
18. $16x^2=1$

EXTRA PRACTICE — Answer Key

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Find the indicated product for each of the following.

1. $4x^2 - 49$

2. $36x^2 - 25a^2$

3. $n^2 - 121$

4. $16y^2 - 25$

5. $49x^2 - 9$

6. $36c^2 - 25d^4$

7. $4a^4 - 12$

8. $25a^2b^2 - 4$

9. $9m^4 - 16n^2$

Solve the following polynomial equations by recognizing the polynomials as the difference of two perfect squares and by knowing that each can be rewritten as a product of two binomials, one a sum and the other a difference.

10. $S = \{4, -4\}$

11. $S = \left\{\frac{3}{2}, -\frac{3}{2}\right\}$

12. $S = \left\{\frac{7}{6}, -\frac{7}{6}\right\}$

13. $S = \left\{\frac{3}{5}, -\frac{3}{5}\right\}$

14. $S = \left\{\frac{1}{3}, -\frac{1}{3}\right\}$

15. $S = \left\{\frac{1}{2}, -\frac{1}{2}\right\}$

16. $S = \left\{\frac{5}{2}, -\frac{5}{2}\right\}$

17. $S = \{6, -6\}$

18. $S = \left\{\frac{1}{4}, -\frac{1}{4}\right\}$