

**Lesson #10 A-2: Understanding Basic and Advanced Factoring of Special Product Polynomials  
(Reference: Lesson #61 in book)****Problem**

1. Please completely factor each of the following polynomials using the special product rules and techniques we have cover in class.

1.  $x^2 + 10x + 25$

2.  $36x^2 - 48x + 16$

3.  $2x^5 + 28x^4 + 98x^3$

4.  $50xy^4 + 80x^2y^3 + 32x^3y^2$

5.  $72x^3y^2 - 96x^2y^3 + 32xy^4$

6.  $64x^4y^4 - 48x^3y^5 + 9x^2y^6$

7.  $25x^2 - 16$

8.  $36x^2 - 9y^2$

9.  $72x^4y - 32x^2y$

10.  $27x^3y^2 - 75xy^4$

11.  $27x^3 - 64y^3$

12.  $64x^3 + 125y^3$

13.  $54x^6 + 128x^3$

14.  $24x^4y - 81xy^4$

15.  $27x^8y^4 - 64x^5y^7$

16. Please fully factor each of the following polynomials by grouping.

16.  $28x^3 + 16x^2 - 21x - 12$

17.  $12x^2y + 3x^2 + 28y^3 + 7y^2$

18.  $4x^2y^2 - 12xy^2z + 8xy^3 - 24y^3z$

19.  $6xy^2 - 48x^2y - 14y^2 + 112xy$

20.  $9xy^3 + 18xy^2z + 12xy^2 + 24xyz$