

**Lesson #10 A-4: Factoring Complex Trinomials and Factoring Polynomials by Grouping
(Reference: Lesson #61 in book)****Problem**

1. Please fully factor each of the following Polynomials.

1. $4x^2y^2 - 12xy^2z + 8xy^3 - 24y^3z$

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

3. $42x^3y^2 + 24x^2y^2 - 42xz - 24z$

4. $9x^3y^6 + 18x^3y^5z + 12x^3y^5 + 24x^3y^4z$

5. $60x^5y + 100x^4y^2 - 135x^3y - 225x^2y^2$

6. $12x^2y^2z^3 + 27x^2z^3 + 28y^4 + 63y^2$

7. Please fully factor each of the following trinomials and complex trinomials by grouping or previous methods.

7. $12x^6y^3z + 60x^5y^3z + 75x^4y^3z$

8. $18x^5y^3z + 63x^4y^3z^2 + 27x^3y^3z^3$

9. $-32x^4y^{10}z^2 + 16x^3y^{10}z^2 + 240x^2y^{10}z^2$

10. $36x^3y^2z^5 + 18x^2y^2z^6 - 108xy^2z^7$

11. $90x^3y^3z^8 - 6x^2y^4z^9 - 12xy^5z^{10}$

12. $75x^5yz^{12} - 30x^4y^2z^{12} - 45x^3y^3z^{12}$