

Practice Quiz #4: Exponential Rules, Multiplying and Factoring Complex Polynomials
(Reference: Lesson #23 & #61 in book)**Problem**

1. Please multiply each of the following polynomials and then get your answer into standard form.

1. $-7x^2y^2(2xy + 4x^3y^2 + 1)$

2. $(3x^2y - x)(2x^2y^2 + 3xy - 5)$

3. $(3x^3y^3 - x^2y)^2$

4. $x^3y(4x^3y^2 + 3x^2y + 4)(5x^3y^2 + 3x^2y - xy)$

5. Please fully factor each of the following Polynomials using the techniques learned in the previous factoring lessons.

5. $18x^4yz^8 + 3x^3y^2z^8 - 6x^2y^3z^8$

6. $27x^3y^2 - 75xy^4$

7. $50x^4y^4 - 30x^3y^4 - 500x^3y^3 + 300x^2y^3$

8. $72x^3y^2 - 96x^2y^3 + 32xy^4$

9. $18x^5y^3z + 63x^4y^3z^2 + 27x^3y^3z^3$

10. $27x^8y^4 - 64x^5y^7$

11. $3x^3y^3z^3 - 4x^2y^3z^3 + 20xy^2z^3 - 15x^2y^2z^3$

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