MTH-4106 Factoring and Algebraic Fractions: **Worksheet #4**

Factor the following polynomials by using the appropriate method.

4 or 6 terms: Try grouping. If that doesn't work then try removing the common factor.
3 terms: If it is of the format $ax^2 + bx + c$ then use product-sum method. If not, then remove common factor.
Any other number of terms: Remove common factor.

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

2. $15m + 10n + 9t^2m + 6nt^2$

3. $x^2 - 2x - 15$

4. $28a^4c^2y - 14axy + 7a^3y^2c$

5. $s^5 - s^4 + s - 1$

6. $x^2 + 3x - 18$

7. $6s^4t^2 + 12s^2t - 18ust^3$

8. $2b - 8a + ba - 4a^2$

9. $a^2 - 6a + 9$

10. $6a^2b^3x^2 - 24a^3b^2xy + 18ab^2x^3 - 30b^3x^4y^2 + 3a^4b^4cx^2y^2$

11. $a^3 + a^2 + 3a + 3$

12. $b^2 + 14b + 33$

13. $24e^2f^3g - 16e^2f^2g^2 + 8efg - 32e^3f^3g^3$

14. $12a^3x + b^4y - y - 4x + 4b^4x + 3a^3y$

15. $x^2 - 7x + 6$

Answers to Worksheet #4

1. $2xy(2x^2y - y^2 + 4x)$
2. $(5 + 3t^2)(3m + 2n)$
3. $(x-5)(x+3)$
4. $7ay(4a^3c^2 - 2x + a^2yc)$
5. $(s^4+1)(s-1)$
6. $(x+6)(x-3)$
7. $6st(s^3t + 2s - 3ut^2)$
8. $(2+a)(b-4a)$
9. $(a-3)^2$ or $(a-3)(a-3)$
10. $3b^2x\,(2a^2bx - 8a^3y + 6ax^2 - 10bx^3y^2 + a^4b^2cxy^2)$
11. $(a^2+3)(a+1)$
12. $(b+3)(b+11)$
13. $8efg(3ef^2 - 2efg + 1 - 4e^2f^2g^2)$
14. $(3a^3 + b^4 - 1)(4x+y)$
15. $(x-6)(x-1)$