1. Factor: $9x^4 + 18x^3 + 6x^2$

$= 3x^2(3x^2 + 6x + 2)$

GCF $\quad \frac{9x^4}{3x^2} \quad \frac{18x^3}{3x^2} \quad \frac{6x^2}{3x^2}$

2. Factor: $15x^4y^6 - 3x^3y^5 + 12x^4y^4$

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

GCF $\quad \frac{15x^4y^6}{3x^3y^4} \quad \frac{-3x^3y^5}{3x^3y^4} \quad \frac{12x^4y^4}{3x^3y^4}$

3. Factor: $-5x^3 + 50x^2 - 10x$

$= -5x(x^2 - 10x + 2)$

negative GCF $\quad \frac{-5x^3}{-5x} \quad \frac{50x^2}{-5x} \quad \frac{-10x}{-5x}$

4. Factor: $4y(a-b) - (a-b)$

$= (a-b)(4y-1)$

5. Factor by grouping: $x^3 - 2x^2 + 5x - 10$

$= x^2(x-2) + 5(x-2)$

$= (x-2)(x^2+5)$

6. Factor by grouping: $xy - 5x + 9y - 45$

$= x(y-5) + 9(y-5)$

$= \boxed{(y-5)(x+9)}$

7. Factor by grouping: $2x^3 - 10 + 4x^2 - 5x$

$= 2x^3 + 4x^2 - 5x - 10$

$= 2x^2(x+2) - 5(x+2)$

$= \boxed{(x+2)(2x^2-5)}$

Q: What is the word that everybody always says wrong?