Secondary Math III
Operations/Factoring GCF
Assignment 1.2

Name_____
Period:_____

Add or subtract as indicated.

1. $\left(-2m^3+8m^2\right)+\left(m^4-m^3+2m\right)$

2. $\left(-4m^2+3n^2-5n\right)-\left(3m^2-5n^2+2n\right)+\left(-3m^2+5n^2\right)$

3. $\left(3a^2+1\right)-\left(4+2a^2\right)$

4. $\left(-9x^2-8y\right)+\left(-2xy-2y^2+x^2\right)+\left(-x^2+4xy\right)$

Multiply the polynomials. Write answers in standard form.

5. $-5a^3\left(4a^2\right)$

6. $2x(3x^2-7)$

7. $5r^3\left(2r^2-3r-4\right)$

8. $(4k+3)(3k-2)$

9. $(6c-1)(2c+3)$

10. $5(x+7)^2-3$

11. $-2(x-10)^2+5$

12. $(8+3m)^2$

Factor out the greatest common factor.

13. $6k^3 - 36k^4 + 48k^5$ GCF:_____

14. $6p^3 - 3p^2 + 9p^4$ GCF: _____

15. $15y^3z^3 + 27y^2z^4 - 36yz^5$ GCF:_____

16. $-50r^4t^2 + 80r^3t^3 - 90r^2t^4$ GCF: _____

Given $f(x) = 5x - 2$ **and** $g(x) = x^2 + 3$**, find the following**:

17. $f(x) + g(x)$

18. $f(x) - g(x)$

19. $f(x) \times g(x)$

20. $f(-3) + g(-2)$

For problems 21-24, determine whether the expressions are equivalent. Show work.

21. $6x^2 + 12$ and $6x(x + 2)$

22. $8x(2x + 1) + 8x^2$ and $8x(3x + 1)$

23. $(3n + 1)(3n - 1)$ and $6n^2 - 1$

24. $3n^2 + (n + 1)(n - 2)$ and $(2n - 2)(2n + 1)$

25. Algebraically show that $h(x) + j(x)$ is equivalent to $k(x)$.
$h(x) = 2x - 3; \quad j(x) = -4x + 6; \quad k(x) = -2x + 3$

26. Algebraically show that $h(x) - j(x)$ is equivalent to $k(x)$.
$h(x) = -3x + 5; \quad j(x) = -5x - 7; \quad k(x) = 2x + 12$