Algebra 2
WS: 4.2, 4.3 Review

Name_____

Date_____Block_____

In 1 – 13, find each sum, difference, or product.

1. $\left(10x^2 + 5\right) - \left(6x^2 - x + 4\right)$

8. $(2 - x)\left(10x^2 - 7x + 9\right)$

2. $\left(x^5 + 3x^4 - x + 7\right) + \left(3x^5 - 8x^4 - x^3 + 12\right)$

9. $\left(-2x^2 - 5x + 1\right)\left(x^2 + 3x - 2\right)$

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

10. $\left(8x^3 - 2x^2 + 6x - 18\right) + \left(4x^3 - x^2 - 5x + 7\right)$

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

11. $(15x - 8) - (20x + 8)$

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

12. $(x - 2)(x + 4)(x - 10)$

6. $(x - 4)(x + 3)$

13. $(2x - 1)(3 - x)(4 + 2x)$

7. $\left(5x^2 - x + 2\right)\left(-4x + 1\right)$

In 14 - 17, divide using polynomial long division.

14. $\left(x^2 + x - 10\right) \div (x - 2)$

16. $\left(8x^3 + 2x^2\right) \div \left(x^2 - 1\right)$

15. $\left(x^3 + x^2 + x + 4\right) \div \left(x^2 + 2\right)$

17. $\left(4x^4 - 36x^2 - 30x - 12\right) \div \left(x^2 - 3x\right)$

In 18 - 21, divide using synthetic division.

18. $\left(x^2 + 3x - 1\right) \div (x + 1)$

20. $\left(x^3 - 2x^2 + x - 6\right) \div (x + 3)$

19. $\left(5x^2 - 2x + 8\right) \div (x - 4)$

21. $\left(x^2 + 16\right) \div (x - 4)$

In 22 - 25, use synthetic division to evaluate the function for the indicated value of x.

22. $f(x) = x^3 + x^2 - 4x + 3; \ x = -1$

24. $f(x) = x^4 + 5x^2 - 8x + 1; \ x = 4$

23. $f(x) = -x^3 - 6x^2 + 6; \ x = -2$

25. $f(x) = -x^4 - x^2 - 5; \ x = 3$