***UNIT 2A REVIEW NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***Write each sum or difference as a polynomial in standard form.***

1. (x2 – 5x3 + 7) + (4x3 + 2x2 + 3x – 4) 2. (x4 + 6x2 + x) – (x4 + 2x3 + x – 6)

***Find the product and write in standard form.***

3. 2x (x – 4) 4. (2x + 1)2  5. -4y3 (6y3 – 5y4 + 3y – 1) 6. (3x – 2)(2x + 1)

***Divide using long division:***

7.  8. 

9.  10. $\left(3x^{4}-5x^{3}+15x^{2}-4x+3\right)÷(x-4)$

***Divide using synthetic division:***

11. (x3 + x2 –9x – 9) (x + 1) 12. (x3 + 3) (x – 1)

13. $(6x^{3}+2x^{2}-11x+12)÷(3x+4)$ 14. (6x3 – 28x2 + 19x + 3) (x – 2)

***Using the remainder theorem, determine if each a factor:***

15. (x5 + 6x4 – 3x2 – 22x – 29) (x + 6)

***Factor the following expressions completely, if possible.***

16. a2 + 17a – 60 17. 4a3 –a5  18 . 6a2 – 11a – 7

19. a2 – 81 20. x2 + 14x + 49 21. 7a – 7b + a2 – ab

22. b3 – 8 23. x18 + 125 24. 27 – 64y3

25. 2y2 – 32 26. 12x2 – 7x + 1 27. 14a2 + 3a – 5

28. 9a2 + 4b2 29. 45 – 5a2 30. 18a4 – 2a2

31. m2 + mp + 3m + 3p 32. 5x2 – 5x - 10

***Simplify or perform the operation indicated.***

33.  34.  35. 

36.  37. (6 + 7i ) + (-8 – 5i) 38. (9 + 4i) – (3 – 6i)

39. (2 + 5i)(2 – 5i) 40. (3 – 2i)2 41. – 8i (2 + 4i –i2)

42. 6i (2 – 3i) 43. (3 + 6i)(7 – 2i) 44. (2 – 3i)(2 + 3i)

45.  46.  47. 

48. $\frac{3}{2 – 5i}$ 49. $\frac{2}{-1– 3i}$ 50. $\frac{2-i}{3+2i}$