Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_

Honors Algebra 2 Section 3.1-3.3

***Add or subtract. Write your answer in standard form. Then identify the leading coefficient, degree, and number of terms. Name the polynomial.***



1) 2)



3)

4) What polynomial could you subtract from 5*x* 3 − 12*x* − *x* 2 + 9 − 12*x* 5 − 6*x* 4 to give
a difference of 19 + 8*x* 3 − 18*x* − 19*x* 5 − 2*x* 2 − 8*x* 4?

***Find each product. Write your answer in standard form.***



5) 6)

7) 8)

9) 10)

***Divide by using long division.***

11) (2*x*  3 + 14*x*  2 − 4*x* − 48) ÷ (2*x* + 4) 12) (*x*  3 + 12*x*  2 − 4) ÷ (*x* − 3)

***Divide by using synthetic division.***

13) (6*x*  5 − 3*x*  2 + *x* − 2) ÷ (*x* − 1) 14) (−*x*  4 − 7*x*  3 + 6*x*  2 − 1) ÷ (*x* − 3)

15) The total weight of the cargo entering a seaport each year can be modeled by the function *C*(*t*) = 0.2*t*  3 + 1000*t*  2 + 10*t* + 50,000, where *t* is the number of years since the port was opened. The average weight of cargo delivered by each ship is modeled by the function *A*(*t*) = 0.1*t* + 500. Write an expression describing the number of ships entering the port each year.