Algebra 2 Name _____

Lesson 3.2 Worksheet

Block _____ Date _____

Multiply each polynomial.

1) $(4n + 3)(3n^2 + 3n - 8)$

2) $(2n^2 + n + 6)(8n^2 - 3n + 1)$

3) $(3x + 1)^3$

4) $(x - 2)^4$

Use synthetic division to divide each polynomial.

5) $(p^4 + 2p^3 - 12p^2 - p - 30) \div (p - 3)$

6) $(a^5 + a^4 - 46a^3 + 80a^2 - 3) \div (a + 8)$

7) $(n^3 - 13n^2 + 36n - 17) \div (n - 3)$

8) $(m^4 - 6m^3 - m) \div (m - 6)$

Use synthetic substitution to evaluate each polynomial for the given value.

9) $P(n) = 3n^3 - 5n^2 + 3n - 13$ for $n = 2$

10) $f(a) = a^3 + 2a^2 - 25a + 5$ for $a = -6$

11) $f(m) = m^6 - 21m^4 + 19m^3 + m^2 + 33m + 17$ for $m = -5$

12) $f(m) = -2m^5 + 12m^4 - 6m^3 + 39m^2 - 12m - 47$ for $m = 6$