Name: _____ Date: _____ Period: _____

5.6 – 5.7 Dividing Polynomial Functions DAY TWO CYU

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Long Division	1	2	3
Synthetic Division	4, 5	6, 7	8 - 10

Divide the polynomials using long division. Show all work for full credit.

1. $(x^3 + x^2 + x + 2) \div (x^2 - 1)$ 2. $(7x^3 + x^2 + x) \div (x^2 + 1)$ 3. $(4x^4 + 5x - 4) \div (x^2 - 3x - 2)$

Divide the polynomials using synthetic division. Show all work for full credit.

4. $(x^2 + 8x + 1) \div (x - 4)$ 5. $(4x^2 - 13x - 5) \div (x - 2)$

6. $(2x^2 - x + 7) \div (x + 5)$

7. $(x^3 - 4x + 6) \div (x + 3)$

8. $(3x^3 - 5x^2 - 2) \div (x - 1)$

9. $(x^4 + 4x^3 + 16x - 35) \div (x + 5)$

10. **COMPARING METHODS** The profit P (in millions of dollars) for a DVD manufacturer can be modeled by P = - $6x^3$ + 72x, where x is the number (in millions) of DVDs produced. Use synthetic division to show that the company yields a profit of $96 million when 2 million DVDs are produced. Is there an easier method? Explain.

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*
Rate your mastery level!
How confident are you with the skills this CYU covered? Circle the score you would give yourself.

| 1   2 | 3   4   5 | 6   7 | 8 |
| Basic | Intermediate | Advanced | Solved ALL! |