

Name: _____ Date: _____ Period: _____

4.3 Dividing Polynomial Functions CYU

Use when you get it right all by yourself

S Use when you did it all by yourself, but made a silly mistake

H Use when you could do it alone with a little help from teacher or peer

G Use when you completed the problem in a group

X Use when a question was attempted but wrong (get help)

N Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Long Division	1	2	3
Synthetic Division	4, 5	6, 7	8, 9, 14
Synthetic Substitution	10 - 13	14	

Divide using polynomial 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 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. $(x^4 + 4x^3 + 16x - 35) \div (x + 5)$

Use synthetic division to evaluate the function or the indicated value of x . Show all work for full credit.

10. $f(x) = -x^2 - 8x + 30; x = -1$

11. $f(x) = x^3 + x^2 - 3x + 9; x = -4$

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

13. $f(x) = x^4 + 6x^2 - 7x + 1; f(3)$

14. **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.

