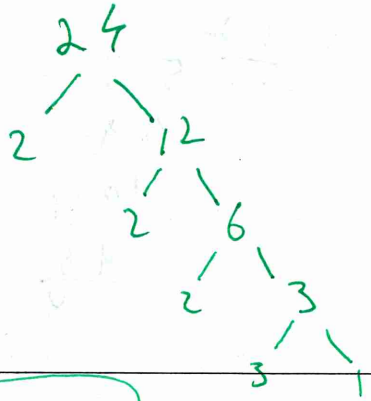
Name:_____ Date:_____

Class worksheet: Alg2H
Rational expressions, Intro
(book chapter 6)

Integers (numbers)	Polynomials (x)
Add/ subtract $7-3=4$	✓ $(2x^2+3x+5)-(x^2+2x+7)$ $x^2+x+12.$
Multiply $3\cdot 4=12$	✓ (FOIL) $(x+3)(2x+7)$ $=2x^2+7x+6x+21$ $=2x^2+13x+21$
Factoring: GCF, GCD (tree)  $2^3\cdot 3$	Factoring $a^2-b^2=(a+b)(a-b)$ $a^2+2ab+b^2=$ $a^3-b^3=$ $a^3+b^3=$

Division : Rational numbers	Division : Rational expressions
Reduce: $\frac{6}{9} = \frac{2}{3}$	$\frac{2x+6}{x+3} = \frac{2(x+3)}{(x+3)} = 2$ $\frac{x^2-9}{x+3} = \frac{(x+3)(x-3)}{(x+3)} = (x-3)$
Add: $\frac{2}{3} + \frac{1}{3} = \frac{3}{3} = 1$ $\frac{2}{3} + \frac{1}{4} = \frac{8+3}{12} = \frac{11}{12}$ $\frac{1}{12} + \frac{1}{20} = \frac{5+3}{60} = \frac{8}{60} = \frac{2}{15}$ $4 \cdot 3 \cdot 5 = 60$	$\frac{2}{x+3} + \frac{3}{x^2-9} = ?$ $\frac{2}{x+3} + \frac{1}{x+3} = \frac{3}{x+3}$
Subtract: 12 → 3, 4 → 2, 2 20 → 5, 4 → 2, 2	
Multiply: $\frac{2}{3} \cdot \frac{4}{9} = \frac{8}{27}$ $\frac{2}{3} \cdot \frac{6}{7} = \frac{4}{7}$	$12 \overline{)372584}$ → 31048, $\frac{8}{12}$ 36 12 12 ∴ 58 48 104 96 8
Divide: $\frac{\frac{2}{3}}{\frac{4}{9}} = \frac{2}{3} \cdot \frac{9}{4} = \frac{3}{2}$ $\frac{2}{3} \div \frac{4}{9} =$ ↑	
Quotient: $\frac{9}{2} = 4 + \frac{1}{2}$	