Name: _____

Algebra Ch. 12 Factoring

12-1 Warm-Up

1. List all numbers that can be multiplied to equal 30. _____

2. List all numbers that go into 45 and 27. _____

3. Name 5 multiples of 6. _____

Algebra 12-1 Factoring Integers

Word	Definition	Example
Factors		
Multiple		
Common Factor		
Prime Numbers		

Composite Numbers		
Prime Factorization		
Standard Form		

Examples

1. List prime numbers between 10 and 25. _____

2. Write the prime factorization of 432, 432 in standard form.

3. Use prime factorizations of 60 and 28 to...

   a. Write the prime factorization of 60 • 28.

   b. Write $\frac{28}{60}$ in lowest terms.

Assignment: 12-1 #'s 1-7, 10-13, 15-18, give examples for 18, 20

Algebra 12-2: Common Monomial Factoring

Warm-Up

Fill in the blank.

1. $15x^2 + 20 = $ _____ $(3x^2 + 4)$

2. $18x^2 + 12x = $ _____ $(3x + 2)$

Algebra 12-2: Common Monomial Factoring

Word	Definition	Example
Greatest Common Factor		
Prime Polynomials		

Examples

1. Find the GCF among the following: $16a^5m$ $-12a^3m^3$ $4a^2m^5$

2. Factor.

   $18y^3 - 6y^2 - 15y$

3. Simplify

$$\frac{-10z^2 + 5z}{5z}$$

Assignment: 12-2 #'s 1-6a, 8-18, 20-23 abc, 28

Algebra 12-3 Day 1: Factoring $x^2 + bx + c$
Warm-Up Brain Teasers

1. Find 2 numbers that multiply to equal 96 and add up to 28. _____

2. Find 2 number2 that multiply to equal 90 and add up to -21. _____

3. Find 2 numbers that multiply to equal -54 and add up to -3. _____

Algebra 12-3 Factoring $x^2 + bx + c$

	X	1	1	1
X				
1				
1				

**Write an equality (=) that represents the area (lw)
of the tiles and the sum of the smaller tiles.** _____

Hints...

- Take out the GCF first, if there is one. Example: $3x + 6x^2 = $ _____ (_____ + _____)

- List the factors & sum.

- Check by multiplying (_____) or graphing on a calculator.

Examples
Factor.

1. $y^2 - 3y - 54$ 2. $c^2 - 16$

3. $3r^3 + 30r^2 + 75r$

Assignment: 12-3 #'s 2-20, 24

Algebra 12-3 Day 2: Factoring $x^2 + bx + c$
Warm-Up/Review

Factor.

1. $x^2 + 8x + 12$ 2. $x^2 - 9x - 22$

3. $2x^2 - 32$ 4. $18a^4 + 6a^2 - 9a$

5. Draw a rectangle that represents the polynomial $b^2 + 7b + 10$.

(Hint: find the length and width first by _____)

Assignment: 12-3 Wkst

12-4 Solving Some Quadratics by Factoring

Warm-Up

Factor

1. $5x^3 - 20x^2 + 20x$

Algebra 12-4 Solving Some Quadratics by Factoring

Word	Definition	Example
Zero Product Property		

How to Use the Zero Product Property to Solve Quadratics

1. Is the equation in standard form? _____

2. Factor - _____

3. Set each factor equal to _____ and solve.

Solve.

1. $r^2 - 11r - 12 = 0$

2. $10t^3 + 80t^2 - 200t = 0$

Assignment: 12-4 #'s 3-9, 14-22, 26-28

12-1 to 12-4 Quiz Review

1. a. Factor $t^2 + 9t + 14$.

   b. Solve $t^2 + 9t + 14 = 0$.

2. Factor $25x^4y + 15x^2y + 50xy$.

3. Use the diagram to factor $x^2 + 10x + 21$

	x	1	1	1	1	1	1	1
x								
1								
1								
1								

Algebra 12-5 Factoring $ax^2 + bx + c$

Warm-Up

Solve by factoring.

1. $x^2 + 10x - 24 = 0$ 2. $t^2 + 9t + 18 = 0$

Factor $2x^2 + 5x + 3$.

1. Multiply "a value and c value"
2. Factor.
3. _____ by the number you multiplied by in step _____.
4. _____.
5. Place numbers in the _____ in front of the variable.
6. Check by _____ or _____.

Examples

1. $2n^2 - 3n - 20$ 2. $6y^2 - 29y - 5 = 0$

Assignment: 12-5 #'s 1 a-d, 2-8, 12-16, 20, 22

Algebra 12-7 Rational & Irrational Numbers

Warm-Up

1. Give an example of 3 fractions that are repeating decimals when written in decimal form.

   _____, _____, _____

2. Give an example of a number that is not a whole number, integer, fraction, and does not repeat.

Algebra 12-7 Rational & Irrational Numbers

Word	Definition	Example
Rational Number		
Irrational Number		

Example:

Write 9.45 as a simple fraction.

1. _____ both sides by 10^n.
   n = number of digits repeated

2. Subtract: New - _____

3. Solve _____.

4. Reduce.

5. _____ answer by dividing.

Assignment: 12-7 #'s 1-5, 8, 10-13, 15-22