Factoring Continued

Review

① Factor $r^2 - 6r + 9 = (r-3)(r-3)$

$\times 9$ | $+ -6$ | -9 | $-1, -9$ | $-3, -3$

② Greatest Common Factor (GCF) $= \frac{4x^2}{4} + \frac{52x}{4} + \frac{144}{4}$

$= 4(x^2 + 13x + 36)$

$= 4(x+4)(x+9)$

$\times 36$ | $+13$ | 36 | $1, 36$ | $2, 18$ | $3, 12$ | $4, 9$

Factor each completely.

When you see a polynomial where both numbers have a square root it is called DIFFERENCE OF SQUARES

2) $25m^2 - 4$

$\sqrt{25m^2} - \sqrt{4}$

$\sqrt{25} = 5$

$\sqrt{4} = 2$

$= (5m - 2)(5m + 2)$

Infinite Algebra 2

Show

Factor each completely.

First - Look for GCF. What do you do if there isn't one?!

3) $16n^2 + 40n + 25$ You have to use DECOMPOSITION

$16n^2 + 40n + 25$

$\times$ 400

$+$ 40

4, 10

2, 200

$= (16n^2 + 20n)(20n + 25)$

$4n \quad 4n \quad 5 \quad 5$

16, 25

20, 20

$= 4n(4n+5) + 5(4n+5)$

$= (4n+5)(4n+5)$

Factor each completely.

This is a Difference of Squares

4) $9x^2 - 1$

$\sqrt{9} = 3$

$\sqrt{1} = 1$

$9x^2 - 1$

$= (3x - 1)(3x + 1)$

$3x \cdot 3x = 9x^2$

$-1 \cdot +1 = -1$

Factor each completely.

This would be Decomposition

5) $9b^2 - 12b + 4$

$9b^2 - 12b + 4$

$\times 36$

$+ -12$

*always pull this out

$-1, 36$

$-2, +18$

$-3, +12$

$-4, -9$

$-6, -6$

$= \left(\frac{9b^2}{3b} - \frac{6b}{3b}\right)\left(\frac{-6b+4}{-2} \quad \frac{}{-2}\right)$

$= 3b(3b-2) - 2(3b-2)$

$= (3b-2)(3b-2)$