

Math 2
 Unit 2A Day 5 Notes – Factoring
 Factor Completely.

Name: Key
 Date: _____

1)	GCF: Coefficients	$6x^2 + 3x + 9$ $3(2x^2 + x + 3)$
2)	GCF: Variables Only	$11x^3 + 12x^2$ $x^2(11x + 12)$
3)	GCF: Both	$8x^4 + 12x^3 - 20x^2$ $4x^2(2x^2 + 3x - 5)$
4)	Grouping: General <i>(only works when you see 4 terms)</i>	$(3x^3 - 15x^2) - (2x + 10)$ $3x^2(x - 5) - 2(x - 5)$ $(3x^2 - 2)(x - 5)$
5)	Grouping: Grouping GCF 1/-1	$(5x^3 - 30x^2) - (x + 6)$ $5x^2(x - 6) - 1(x - 6)$ $(5x^2 - 1)(x - 6)$
6)	Diff of Squares: Basic $(\sqrt{x^2} - \sqrt{y^2}) \rightarrow (x + y)(x - y)$	$x^2 - 49$ $\sqrt{49}$ $(x + 7)(x - 7)$
7)	Diff of Squares: a>1	$9x^2 - 25$ $\sqrt{9}$ $\sqrt{25}$ $(3x + 5)(3x - 5)$
8)	Diff of Squares: exp > 2	$25x^{10} - 49y^6$ $\sqrt{25}$ $\sqrt{49}$ $(5x^5 + 7y^3)(5x^5 - 7y^3)$
9)	Simple Trinomial: + +	$x^2 + 15x + 56$ add multiplies $\begin{array}{r l} 1 & 56 \\ \hline 8 & 7 \\ 7 & 8 \end{array}$ $\begin{array}{r} 8 \\ \times 7 \\ \hline 56 \end{array}$ $(x + 8)(x + 7)$
10)	Simple Trinomial: - -	$x^2 - 7x + 10$ $\begin{array}{r l} 1 & 10 \\ \hline -5 & -2 \end{array}$ $\begin{array}{r} -5 \\ \times -2 \\ \hline 10 \end{array}$ $(x - 5)(x - 2)$
11)	Simple Trinomial: + -	$x^2 - 4x - 21$ $\begin{array}{r l} 1 & -21 \\ \hline -7 & 3 \end{array}$ $\begin{array}{r} -7 \\ \times 3 \\ \hline -21 \end{array}$ $(x - 7)(x + 3)$
12)	GCF and Grouping:	$30x^4 + 12x^3 + 15x^2 + 6x$ $3x((10x^3 + 4x^2) + (5x + 2))$ $3x(2x^2(5x + 2) + 1(5x + 2))$ $3x(2x^2 + 1)(5x + 2)$
13)	GCF and Diff of Squares:	$7x^2 - 28$ $7(x^2 - 4)$ $\sqrt{4}$ $7(x + 2)(x - 2)$
14)	GCF and Simple Trinomial:	$8x^2 - 24x - 80$ $8(x^2 - 3x - 10)$ $\begin{array}{r l} 1 & -10 \\ \hline 2 & -5 \end{array}$ $\begin{array}{r} 2 \\ \times -5 \\ \hline -10 \end{array}$ $8(x + 2)(x - 5)$

Unit 2A Day 5 HW

Factor Completely.

1)	$3x + 12$	2)	$6x^3 + 5x^2$
3)	$6x^2 + 27$	4)	$12x^3 + 20x^2$
5)	$x^3 + x^2 + 2x + 2$	6)	$9x^3 + 18x^2 + x + 2$
7)	$x^2 - 81$	8)	$25x^2 - 64$
9)	$16x^6 - 121$	10)	$x^2 + 4x + 3$
11)	$x^2 - 8x + 7$	12)	$x^2 + 7x + 12$
13)	$x^2 - 5x - 14$	14)	$5x^2 - 80$
15)	$7x^4 - 28x^2$	16)	$8m^4 - 24m^3 - 12m^2 + 36m$
17)	$3x^2 + 24x + 36$	18)	$2x^3 - 4x^2 - 30x$