

Unit 9: Factoring Quadratics  
 FACTORING -Day 3 Classwork

Name Key  
 Date: \_\_\_\_\_ Period: \_\_\_\_\_

Factor each trinomial. If the trinomial cannot be factored using integers write Prime.

1.  $2x^2 - 3x - 2$

$\begin{array}{r} 4 \\ \hline 1 \ 4 \\ \hline 2 \ 2 \end{array}$ 
 $\begin{array}{r} -4 \\ \hline -4 \\ \hline -3 \end{array}$ 
 $\begin{array}{r} X \ -2 \\ \hline 2x^2 \ -4x \\ \hline 1x \ -2 \end{array}$

$(x-2)(2x+1)$

6.  $3x^2 - 8x - 3$

$\begin{array}{r} 9 \\ \hline 1 \ 9 \\ \hline 3 \ 3 \end{array}$ 
 $\begin{array}{r} -9 \\ \hline -9 \\ \hline -8 \end{array}$ 
 $\begin{array}{r} X \ -3 \\ \hline 3x^2 \ -9x \\ \hline 1x \ -3 \end{array}$

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

2.  $16x^2 - 8x + 1$

$\begin{array}{r} 16 \\ \hline -4 \ -4 \\ \hline \end{array}$ 
 $\begin{array}{r} 16 \\ \hline -4 \\ \hline -8 \end{array}$ 
 $\begin{array}{r} 4x \ -1 \\ \hline 16x^2 \ -4x \\ \hline -4x \ +1 \end{array}$

$(4x-1)^2$

7.  $6x^2 + 5x - 6$

$\begin{array}{r} 36 \\ \hline 1 \ 36 \\ 2 \ 18 \\ 3 \ 12 \\ \hline 4 \ 9 \end{array}$ 
 $\begin{array}{r} -36 \\ \hline -4 \\ \hline 5 \end{array}$ 
 $\begin{array}{r} 3x \ -2 \\ \hline 6x^2 \ -4x \\ \hline 9x \ -6 \end{array}$

$(3x-2)(2x+3)$

3.  $3x^2 + 2x - 8$

$\begin{array}{r} 24 \\ \hline 1 \ 24 \\ 2 \ 12 \\ \hline 4 \ 6 \end{array}$ 
 $\begin{array}{r} -24 \\ \hline -4 \\ \hline 2 \end{array}$ 
 $\begin{array}{r} 3x \ -4 \\ \hline 3x^2 \ -4x \\ \hline 6x \ -8 \end{array}$

$(3x-4)(x+2)$

8.  $18x^2 - 27x - 5$

$\begin{array}{r} 90 \\ \hline 1 \ 90 \\ 2 \ 45 \\ \hline 3 \ 30 \end{array}$ 
 $\begin{array}{r} -90 \\ \hline -20 \\ \hline -27 \end{array}$ 
 $\begin{array}{r} 3x \ -5 \\ \hline 18x^2 \ -30x \\ \hline 3x \ -5 \end{array}$

$(3x-5)(6x+1)$

4.  $2x^2 + 5x + 3$

$\begin{array}{r} 6 \\ \hline 2 \ 6 \\ \hline 3 \ 3 \end{array}$ 
 $\begin{array}{r} 6 \\ \hline 3 \\ \hline 5 \end{array}$ 
 $\begin{array}{r} 2x \ +3 \\ \hline 2x^2 \ 3x \\ \hline 2x \ 3 \end{array}$

$(2x+3)(x+1)$

9.  $8x^2 - 4x - 24$

$\begin{array}{r} -12 \\ \hline 1 \ 12 \\ 2 \ 6 \\ \hline 3 \ 4 \end{array}$ 
 $\begin{array}{r} -12 \\ \hline -4 \\ \hline -1 \end{array}$ 
 $\begin{array}{r} 4(x^2 - x - 6) \\ \hline X \ -2 \\ \hline 2x^2 \ -4x \\ \hline 3x \ -6 \end{array}$

$4(x-2)(2x+3)$

5.  $3x^2 - 6x - 24$

$3x - 12$

72
3   24
4   18
6   12

~~$+6$~~   ~~$-12$~~   ~~$-6$~~

$3x^2$	$-12x$
$6x$	$-24$

$(3x-12)(x+2)$

10.  $3x^2 + 5x + 2$

$x + 1$

6
1   6
2   3

~~$+2$~~   ~~$+3$~~   ~~$5$~~

$3x$	$3x^2$	$3x$
$+2$	$2x$	$2$

$(x+1)(3x+2)$

11.  $2x^2 + 3x - 6$

12
1   12
2   6
3   4

~~$+3$~~   ~~$-6$~~   ~~$-12$~~

$2x^2$	
	$-6$

Prime

12.  $6x^2 - 13x + 6$

$2x - 3$

36
2   18
3   12
4   9

~~$-4$~~   ~~$-9$~~   ~~$-13$~~

$3x$	$6x^2$	$-9x$
$-2$	$-4x$	$6$

$(2x-3)(3x-2)$

13.  $4x^2 - 3x - 3$

12
1   12
2   6
3   4

~~$+3$~~   ~~$-3$~~   ~~$-12$~~

$4x^2$	
	$-3$

Prime

14.  $2x^2 - 11x + 15$

$x - 3$

30
1   30
2   15
3   10
5   6

~~$-5$~~   ~~$-6$~~   ~~$-11$~~

$2x$	$2x^2$	$-6x$
$-5$	$-5x$	$15$

$(x-3)(2x-5)$

15.  $2x^2 + x - 1$

$2x - 1$

2
1   2

~~$+2$~~   ~~$-1$~~   ~~$1$~~

$2x^2$	$-1x$
$2x$	$-1$

$(2x-1)(x+1)$

16.  $4x^2 + 15x - 4$

$4x - 1$

14
1   14

~~$+16$~~   ~~$-1$~~   ~~$15$~~

$4x$	$4x^2$	$-1x$
$+4$	$16x$	$-4$

$(4x-1)(x+4)$

17.  $3x^2 - 7x + 2$

$3x - 1$

6
1   6

~~$-6$~~   ~~$-1$~~   ~~$-7$~~

$3x^2$	$-1x$	
$-2$	$-6x$	$2$

$(3x-1)(x-2)$

18.  $3x^2 - 2x - 5$

$3x - 5$

15
1   15
3   5

~~$+3$~~   ~~$-5$~~   ~~$-2$~~

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

$(3x-5)(x+1)$