

# Factoring - Day 3

Homework

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

Factor each trinomial.

1.  $x^2 + 7x + 12$

$$\begin{array}{r} 12 \\ \overline{) 12} \\ 2 \ 6 \\ \hline 3 \ 4 \end{array}$$

7	
+3	+4
12	

$$\begin{array}{r} 1x + 4 \\ \times 1x \\ \hline 1x^2 + 4x \\ + 3x + 12 \\ \hline x^2 + 7x + 12 \end{array}$$

$(x+3)(x+4)$

2.  $x^2 + 8x - 20$

$$\begin{array}{r} 20 \\ \overline{) 20} \\ 2 \ 10 \\ \hline 2 \ 10 \end{array}$$

8	
+10	-2
-20	

$$\begin{array}{r} 1x + 10 \\ \times 1x \\ \hline 1x^2 + 10x \\ - 2x - 20 \\ \hline x^2 + 8x - 20 \end{array}$$

$(x+10)(x-2)$

3.  $x^2 - 14x + 40$

$$\begin{array}{r} 40 \\ \overline{) 40} \\ 2 \ 20 \\ \hline 4 \ 10 \end{array}$$

-14	
-4	-10
40	

$$\begin{array}{r} x - 10 \\ \times x \\ \hline x^2 - 10x \\ - 4x + 40 \\ \hline x^2 - 14x + 40 \end{array}$$

$(x-10)(x-4)$

4.  $x^2 - 10x + 16$

$$\begin{array}{r} 16 \\ \overline{) 16} \\ 2 \ 8 \\ \hline 2 \ 8 \end{array}$$

-10	
-2	-8
16	

$$\begin{array}{r} 1x - 8 \\ \times 1x \\ \hline 1x^2 - 8x \\ - 2x + 16 \\ \hline x^2 - 10x + 16 \end{array}$$

$(x-8)(x-2)$

5.  $2x^2 - 5x - 12$

$$\begin{array}{r} 24 \\ \overline{) 24} \\ 2 \ 12 \\ \hline 3 \ 8 \end{array}$$

-5	
+3	-8
-24	

$$\begin{array}{r} 1x - 4 \\ \times 2x \\ \hline 2x^2 - 8x \\ + 3x - 12 \\ \hline 2x^2 - 5x - 12 \end{array}$$

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

6.  $4x^2 + 8x - 5$

$$\begin{array}{r} 20 \\ \overline{) 20} \\ 2 \ 10 \\ \hline 2 \ 10 \end{array}$$

8	
+10	-2
-20	

$$\begin{array}{r} 2x - 1 \\ \times 2x \\ \hline 4x^2 - 2x \\ + 10x - 5 \\ \hline 4x^2 + 8x - 5 \end{array}$$

$(2x-1)(2x+5)$

7.  $2x^2 + 13x + 20$

$$\begin{array}{r} 40 \\ \overline{) 40} \\ 2 \ 20 \\ \hline 4 \ 10 \\ \hline 5 \ 8 \end{array}$$

13	
+5	+8
40	

$$\begin{array}{r} 2x + 5 \\ \times 1x \\ \hline 2x^2 + 5x \\ + 8x + 20 \\ \hline 2x^2 + 13x + 20 \end{array}$$

$(2x+5)(x+4)$

8.  $3x^2 + 10x + 8$

$$\begin{array}{r} 24 \\ \overline{) 24} \\ 2 \ 12 \\ \hline 3 \ 8 \\ \hline 4 \ 16 \end{array}$$

10	
+4	+6
24	

$$\begin{array}{r} 1x + 2 \\ \times 3x \\ \hline 3x^2 + 6x \\ + 4x + 8 \\ \hline 3x^2 + 10x + 8 \end{array}$$

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