

**Do Now**

A. Simplify:  $(x + 1)(x + 7)$

B. Simplify:  $(x + 2)(x + 5)$

**Aim: TRINOMIAL FACTORING WITH LEADING COEFFICIENT IS ONE**

**Method 1:**

$$x^2 + 8x + 7$$

**Method 2:**

$$x^2 + 8x + 7$$

Trinomial	Factors of the last term	Check
1. $x^2 + 7x + 12$  $y = \frac{\quad}{x}$	$\begin{array}{c c} x & y \\ \hline & \\ & \\ & \\ & \end{array}$	
2. $x^2 + 7x + 10$  $y = \frac{\quad}{x}$	$\begin{array}{c c} x & y \\ \hline & \\ & \\ & \\ & \end{array}$	

**Steps to find all the factors of a number on the calculator:**

1.  $y = \#/x$  (last term)
2. Press 2<sup>nd</sup> graph to look at the table of factors

**Steps for Easy Trinomial Factoring**

- 1) “Double bubble”, with an x in each ( ).
- 2) The first sign drops down in the 1st ( ).
- 3) Multiply the given signs to determine the 2<sup>nd</sup> sign.
- 4) Find factors of the last # that add or subtract to the middle #.
- 5) The bigger # goes first!
- 6) Check by Tabular Method or Double Distributing

3. $x^2 + 11x + 24$  $y = \frac{\quad}{x}$	$\begin{array}{c c} x & y \\ \hline & \\ & \\ & \\ & \end{array}$	
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4. $x^2 + 10x + 21$	$y = \frac{\quad}{x}$	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="padding: 5px;"><math>x</math></th> <th style="padding: 5px;"><math>y</math></th> </tr> </thead> <tbody> <tr> <td style="height: 150px;"></td> <td></td> </tr> </tbody> </table>	$x$	$y$		
$x$	$y$					
5. $x^2 + 13x + 36$	$y = \frac{\quad}{x}$	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="padding: 5px;"><math>x</math></th> <th style="padding: 5px;"><math>y</math></th> </tr> </thead> <tbody> <tr> <td style="height: 150px;"></td> <td></td> </tr> </tbody> </table>	$x$	$y$		
$x$	$y$					
6. $x^2 - 8x + 7$	$y = \frac{\quad}{x}$	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="padding: 5px;"><math>x</math></th> <th style="padding: 5px;"><math>y</math></th> </tr> </thead> <tbody> <tr> <td style="height: 150px;"></td> <td></td> </tr> </tbody> </table>	$x$	$y$		
$x$	$y$					
7. $x^2 - 6x + 8$	$y = \frac{\quad}{x}$	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="padding: 5px;"><math>x</math></th> <th style="padding: 5px;"><math>y</math></th> </tr> </thead> <tbody> <tr> <td style="height: 150px;"></td> <td></td> </tr> </tbody> </table>	$x$	$y$		
$x$	$y$					
8. $x^2 - 14x + 48$	$y = \frac{\quad}{x}$	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="padding: 5px;"><math>x</math></th> <th style="padding: 5px;"><math>y</math></th> </tr> </thead> <tbody> <tr> <td style="height: 150px;"></td> <td></td> </tr> </tbody> </table>	$x$	$y$		
$x$	$y$					

<p>9. <math>x^2 - 20x + 36</math></p> <p style="text-align: right;"><math>y = \frac{\quad}{x}</math></p>	<table style="margin: auto; border-collapse: collapse;"> <tr> <td style="border: none; padding: 0 10px;"><math>x</math></td> <td style="border: none; padding: 0 10px;"><math>y</math></td> </tr> <tr> <td colspan="2" style="border-top: 1px solid black; border-bottom: 1px solid black;"></td> </tr> <tr> <td colspan="2" style="border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></td> </tr> </table>	$x$	$y$					
$x$	$y$							
<p>10. <math>x^2 - 16x + 64</math></p> <p style="text-align: right;"><math>y = \frac{\quad}{x}</math></p>	<table style="margin: auto; border-collapse: collapse;"> <tr> <td style="border: none; padding: 0 10px;"><math>x</math></td> <td style="border: none; padding: 0 10px;"><math>y</math></td> </tr> <tr> <td colspan="2" style="border-top: 1px solid black; border-bottom: 1px solid black;"></td> </tr> <tr> <td colspan="2" style="border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></td> </tr> </table>	$x$	$y$					
$x$	$y$							

**Mixed Practice:**

Remember to always look for \_\_\_\_\_ factoring 1<sup>st</sup>!!!!

<p>11. <math>y^2 - 36</math></p> <p><b>Method:</b> _____</p>	<p>12. <math>6y + 24</math></p> <p><b>Method:</b> _____</p>
<p>13. <math>y^2 - 3y - 28</math></p> <p><b>Method:</b> _____</p>	<p>14. <math>y^2 - 121</math></p> <p><b>Method:</b> _____</p>

15.  $15x + 60y$

**Method:** \_\_\_\_\_

16.  $y^2 + 13y - 30$

**Method:** \_\_\_\_\_