

Name: Key

Date: _____

Day 9- More Multiplying Binomials and Polynomials

Directions: You and a partner will work on the same problem. One partner will use the box method and the other partner will use the FOIL method. When both partners complete the given problem, both will compare answers. You and your partner should receive the SAME answer regardless of the method used to simplify.

Questions	Partner 1	Partner 2						
<p>1.</p> $(x - 3)(x + 4)$	<p>FOIL</p> $(x-3)(x+4)$ $x^2 + 4x - 3x - 12$ $x^2 + x - 12$	<p>BOX</p>						
<p>2.</p> $(3x + 2)(-6x - 1)$	<p>BOX</p> $(3x+2)(-6x-1)$ $-18x^2 - 3x - 12x - 2$ $-18x^2 - 15x - 2$	<p>FOIL</p>						
<p>3.</p> $(3x - 2)(x^2 + 6x)$	<p>FOIL</p>	<p>BOX</p> $3x - 2$ <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="padding: 5px;">x^2</td> <td style="padding: 5px;">$3x^3$</td> <td style="padding: 5px;">$-2x^2$</td> </tr> <tr> <td style="padding: 5px;">$+6x$</td> <td style="padding: 5px;">$18x^2$</td> <td style="padding: 5px;">$-12x$</td> </tr> </table> $3x^3 + 16x^2 - 12x$	x^2	$3x^3$	$-2x^2$	$+6x$	$18x^2$	$-12x$
x^2	$3x^3$	$-2x^2$						
$+6x$	$18x^2$	$-12x$						

<p>4.</p> $(8x^2 - 3x)(-4x + 2)$	<p>BOX</p> $(8x^2 - 3x)(-4x + 2)$ $-32x^3 + 16x^2 + 12x^2 - 6x$ $-32x^3 + 28x^2 - 6x$	<p>FOIL</p>								
<p>5.</p> $(2x - 1)(x^2 + 7x - 9)$	<p>FOIL</p>	<p>BOX</p> $x^2 + 7x - 9$ <table border="1" data-bbox="998 745 1437 892"> <tr> <td>2x</td> <td>2x³</td> <td>+14x²</td> <td>-18x</td> </tr> <tr> <td>-1</td> <td>-x²</td> <td>-7x</td> <td>+9</td> </tr> </table> $2x^3 + 13x^2 + 25x + 9$	2x	2x ³	+14x ²	-18x	-1	-x ²	-7x	+9
2x	2x ³	+14x ²	-18x							
-1	-x ²	-7x	+9							
<p>6.</p> $(7x + 2)(x^2 - 5x + 3)$	<p>BOX</p> $7x^3 - 35x^2 + 21x + 2x^2 - 10x + 6$ $7x^3 - 33x^2 + 11x + 6$	<p>FOIL</p>								

<p>10.</p> <p>$(4x^2 + 3x - 12)(x - 5)$</p>	<p>BOX</p>	<p>FOIL</p> $4x^2 + 3x - 12$ <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 5px;">x</td> <td style="padding: 5px;">$4x^3$</td> <td style="padding: 5px;">$3x^2$</td> <td style="padding: 5px;">$-12x$</td> </tr> <tr> <td style="padding: 5px;">-5</td> <td style="padding: 5px;">$-20x^2$</td> <td style="padding: 5px;">$-15x$</td> <td style="padding: 5px;">$+60$</td> </tr> </table> $4x^3 - 17x^2 - 27x + 60$	x	$4x^3$	$3x^2$	$-12x$	-5	$-20x^2$	$-15x$	$+60$				
x	$4x^3$	$3x^2$	$-12x$											
-5	$-20x^2$	$-15x$	$+60$											
<p>11.</p> <p>$(-2x + 2)(2x^4 + 3x^2 - 5x - 1)$</p>	<p>FOIL</p> $(-2x+2)(2x^4+3x^2-5x-1)$ $-4x^4 + 6x^3 + 10x^2 - 2x + 4x^4 + 6x^2 - 10x - 2$ $-6x^3 + 16x^2 - 8x - 2$	<p>BOX</p>												
<p>Challenge:</p> <p>$(2x^2 - 5x + 6)(6x^2 + 10x - 8)$</p>	<p>BOX</p>	<p>FOIL</p> $2x^2 - 5x + 6$ <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 5px;">$6x^2$</td> <td style="padding: 5px;">$12x^4$</td> <td style="padding: 5px;">$-30x^3$</td> <td style="padding: 5px;">$+36x^2$</td> </tr> <tr> <td style="padding: 5px;">$+10x$</td> <td style="padding: 5px;">$20x^3$</td> <td style="padding: 5px;">$-50x^2$</td> <td style="padding: 5px;">$+60x$</td> </tr> <tr> <td style="padding: 5px;">-8</td> <td style="padding: 5px;">$-16x^2$</td> <td style="padding: 5px;">$+40x$</td> <td style="padding: 5px;">-48</td> </tr> </table> $12x^4 - 10x^3 - 30x^2 + 100x - 48$	$6x^2$	$12x^4$	$-30x^3$	$+36x^2$	$+10x$	$20x^3$	$-50x^2$	$+60x$	-8	$-16x^2$	$+40x$	-48
$6x^2$	$12x^4$	$-30x^3$	$+36x^2$											
$+10x$	$20x^3$	$-50x^2$	$+60x$											
-8	$-16x^2$	$+40x$	-48											

Which method do you prefer?

<p>7.</p> <p>$(9x + 2)(5x^2 + 2x - 9)$</p>	<p>FOIL</p>	<p>BOX</p> $ \begin{array}{r} 5x^2 + 2x - 9 \\ \hline 9x \left[\begin{array}{c c c} 45x^3 & 18x^2 & -81x \\ \hline 10x^2 & 4x & -18 \end{array} \right] \\ +2 \left[\begin{array}{c c c} 10x^2 & 4x & -18 \end{array} \right] \\ \hline 45x^3 + 28x^2 - 77x - 18 \end{array} $
<p>8.</p> <p>$(x^2 + 4x)(3x^2 - 10x + 5)$</p>	<p>BOX</p> $ \begin{array}{r} (x^2 + 4x)(3x^2 - 10x + 5) \\ \hline 3x^4 - 10x^3 + 5x^2 + 12x^3 - 40x^2 + 20 \\ \hline 3x^4 + 2x^3 - 35x^2 + 20 \end{array} $	<p>FOIL</p>
<p>9.</p> <p>$(2x^3 - 1)(3x^2 - 5x + 12)$</p>	<p>FOIL</p>	<p>BOX</p> $ \begin{array}{r} 3x^2 - 5x + 12 \\ \hline 2x^3 \left[\begin{array}{c c c} 6x^5 & -10x^4 & +24x^3 \\ \hline -3x^2 & +5x & -12 \end{array} \right] \\ -1 \left[\begin{array}{c c c} -3x^2 & +5x & -12 \end{array} \right] \\ \hline 6x^5 - 10x^4 + 24x^3 - 3x^2 + 5x - 12 \end{array} $