Polynomial Puzzler

NAME_____

Fill in the empty spaces to complete the puzzle. In any row, the two left spaces should multiply to equal the right-hand space. In any column, the two top spaces should multiply to equal the bottom space.

1.

1	$x + 7$	$x+7$
$-2x + 5$	2	$-4x+10$
$-2x+5$	$2x+14$	$-4x^2-18x+70$

2.

	$x - 3$	
3	$-5x + 1$	
		$30x^2 - 96x + 18$

3.

-4		-8
	$2x - 6$	$-8x^2 + 72$

4.

$x + 3$		
2		$8x$
	$12x$	

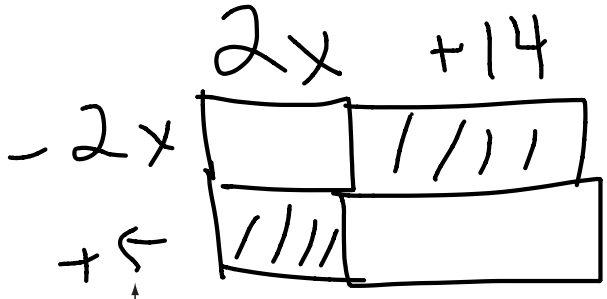
5.

		$2x + 10$
$x + 3$	7	
$2x + 6$		

6.

6	$2x+2$	$12x+2$
3	$x + 3$	$3x+9$
18	$2x^2+8x+6$	$36x^2 + 144x + 108$

$(-2x+5)(2x+14) = -4x+70$



$(2x^5+9x^4-8x^3+63x^2+30x+72) \div (x+6)$

$2x^4-3x^3+10x^2+3x+12$

x	$2x^5$	$-3x^4$	$10x^3$	$3x^2$	$12x$
6	$12x^4$	$-18x^3$	$60x^2$	$18x$	72

	2	9	−8	63	30	72
−6	↓	−12	18	−60	−18	−72
	$2x^4$	$-3x^3$	$+10x^2$	$+3x$	$+12$	0

$(3x^3+4x^2-2x-1) \div (x+4)$

$$
\begin{array}{r|rrrr}
 & 3 & 4 & -2 & -1 \\
-4 & \downarrow & -12 & 32 & -120 \\
\hline
 & 3x^2 & -8x & +30 & -121
\end{array}
$$

$$\frac{-121}{x+4}$$

$3\overline{)7} = 2\frac{1}{3}$