

NAME:

DATE:

A2.Q2.BERMELLEEMBO: FACTORING

(DAY EP4)

EXPRESSIONS

NOTES

Factor Each Polynomial: BOX YOUR ANSWER

①

F	M	L
$2x^2$	$+7x$ Bigger # is +	$+3$ same signs
$2x \cdot x$		$+1 \cdot +3$ $+3 \cdot +1$

} Try these

$$\boxed{(2x + 1)(x + 3)}$$

$$\begin{array}{r} +1x \leftarrow \\ \rightarrow +6x \leftarrow \\ \hline +7x \end{array} \text{ yes}$$

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

$$\begin{array}{r} +3x \leftarrow \\ \rightarrow +2x \leftarrow \\ \hline +5x \end{array} \text{ no}$$

②

F	M	L
$2x^2$	$-x$ Bigger # is -	-3 different signs
$2x \cdot x$		$+1 \cdot -3$ $-3 \cdot +1$

} Try these

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

$$\begin{array}{r} +1x \\ -6x \\ \hline -5x \end{array} \text{ NO}$$

$$\boxed{(2x - 3)(x + 1)}$$

$$\begin{array}{r} -3x \\ +2x \\ \hline -1x \end{array} \text{ yes}$$

③

F	M	L
$5x^2$	$-9x$ Bigger # is -	-2 Different Signs
$5x \cdot x$		$+1 \cdot -2$ $-2 \cdot +1$

Try these

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

$$\begin{array}{r} +1x \\ -10x \\ \hline -9x \end{array} \quad \text{yes}$$

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

$$\begin{array}{r} -2x \\ +5x \\ \hline 3x \end{array} \quad \text{NO}$$

④

F	M	L
$3x^2$	$-10x$ Bigger # is -	-8 Different Signs
$3x \cdot x$		$+1 \cdot -8$ $-8 \cdot +1$ $+2 \cdot -4$ $-4 \cdot +2$

Try these

$$(3x+1)(x-8)$$

$$\begin{array}{r} 1x \\ -24x \\ \hline -23x \end{array} \quad \text{NO}$$

$$(3x-8)(x+1)$$

$$\begin{array}{r} -8x \\ +3x \\ \hline -5x \end{array} \quad \text{NO}$$

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

$$\begin{array}{r} 2x \\ -12x \\ \hline -10x \end{array} \quad \text{yes}$$

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

$$\begin{array}{r} -4x \\ +6x \\ \hline 2x \end{array} \quad \text{NO}$$

⑤	F	M	L
	$3x^2$	$+23x$ Bigger # is +	-8 different signs
	$3x \cdot x$		$-1 \cdot +8$ $+8 \cdot -1$ $-2 \cdot +4$ $+4 \cdot -2$
			} Try These

$$(3x-1)(x+8)$$

$$\begin{array}{r} -1x \\ +24x \\ \hline +23x \end{array} \text{ yes}$$

$$(3x+8)(x-1)$$

$$\begin{array}{r} +8x \\ -3x \\ \hline +5x \end{array} \text{ NO}$$

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

$$\begin{array}{r} -2x \\ +12x \\ \hline +10x \end{array} \text{ NO}$$

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

$$\begin{array}{r} +4x \\ -6x \\ \hline -2x \end{array} \text{ NO}$$

⑥	F	M	L
	$5x^2$	$-17x$ Bigger # is -	$+6$ same signs
	$5x \cdot x$		$-1 \cdot +6$ $-6 \cdot +1$ $-2 \cdot +3$ $-3 \cdot +2$
			} Try These

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

$$\begin{array}{r} -1x \\ -30x \\ \hline -31x \end{array} \text{ NO}$$

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

$$\begin{array}{r} -6x \\ -5x \\ \hline -11x \end{array} \text{ NO}$$

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

$$\begin{array}{r} -2x \\ -15x \\ \hline -17x \end{array} \text{ yes}$$

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

$$\begin{array}{r} -3x \\ -10x \\ \hline -13x \end{array} \text{ NO}$$

★ When the first term is $\frac{1}{x^2}$,
the order does not matter.

⑦

F	M	L
x^2	$-4x$	-12
	Bigger # is -	Different signs
$x \cdot x$		$+1 \cdot -12$ $+2 \cdot -6$ $+3 \cdot -4$

Try these

★ Because these are the same, order doesn't matter.

$$\begin{array}{r}
 (x+1)(x-12) \\
 \begin{array}{r}
 +1x \\
 -12x \\
 \hline
 -11x
 \end{array} \text{ NO} \\
 \boxed{(x+2)(x-6)} \\
 \begin{array}{r}
 +2x \\
 -6x \\
 \hline
 -4x
 \end{array} \text{ yes} \\
 (x+3)(x-4) \\
 \begin{array}{r}
 +3x \\
 -4x \\
 \hline
 -1x
 \end{array} \text{ NO}
 \end{array}$$

⑧

F	M	L
x^2	$-13x$	$+12$
	Bigger # is -	Same signs
$x \cdot x$		$-1 \cdot 12$ $-2 \cdot 6$ $-3 \cdot 4$

Try these

$$\begin{array}{r}
 \boxed{(x-1)(x-12)} \\
 \begin{array}{r}
 -1x \\
 -12x \\
 \hline
 -13x
 \end{array} \text{ yes} \\
 (x-2)(x-6) \\
 \begin{array}{r}
 -2x \\
 -6x \\
 \hline
 -8x
 \end{array} \text{ NO} \\
 (x-3)(x-4) \\
 \begin{array}{r}
 -3x \\
 -4x \\
 \hline
 -7x
 \end{array} \text{ NO}
 \end{array}$$

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F	M	L
x^2	$+x$ Bigger # is +	-12 Different signs
$x \cdot x$		$-1 \cdot 12$ $-2 \cdot 6$ $-3 \cdot 4$ } Try these

$$(x-1)(x+12)$$
$$\begin{array}{r} -1x \\ +12x \\ \hline +11x \end{array} \text{ no}$$

$$(x-2)(x+6)$$
$$\begin{array}{r} -2x \\ +6x \\ \hline +4x \end{array} \text{ no}$$

$$(x-3)(x+4)$$
$$\begin{array}{r} -3x \\ +4x \\ \hline +1x \end{array} \text{ yes}$$