

MULTIPLYING METHODS: DISTRIBUTIVE PROPERTY

Recognizing Patterns

Below are 4 different expanded expressions. What do they have in common?

$$\begin{aligned}(x+2)(x+3) \\ x^2 + 2x + 3x + 6 \\ x^2 + 5x + 6\end{aligned}$$

$$\begin{aligned}(x-2)(x-3) \\ x^2 - 2x - 3x + 6 \\ x^2 - 5x + 6\end{aligned}$$

$$\begin{aligned}(x+2)(x-3) \\ x^2 + 2x - 3x - 6 \\ x^2 - x - 6\end{aligned}$$

$$\begin{aligned}(x-2)(x+3) \\ x^2 - 2x + 3x - 6 \\ x^2 + x - 6\end{aligned}$$

Verbalizing

Generalize what you observed above. Explain what is happening in the pattern you see.

Applying

Use your generalization to multiply: $(x-2)(x^2+5x-3)$.

MULTIPLYING METHODS: BOX METHOD

Recognizing Patterns

Below are 4 different expanded expressions. What do they have in common?

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

	x	$+2$
x	x^2	$+2x$
$+3$	$+3x$	$+6$

$$x^2 + 5x + 6$$

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

	x	-2
x	x^2	$-2x$
-3	$-3x$	$+6$

$$x^2 - 5x + 6$$

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

	x	$+2$
x	x^2	$+2x$
-3	$-3x$	-6

$$x^2 - x - 6$$

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

	x	-2
x	x^2	$-2x$
$+3$	$+3x$	-6

$$x^2 + x - 6$$

Verbalizing

Generalize what you observed above. Explain what is happening in the pattern you see.

Applying

Use your generalization to multiply: $(x-2)(x^2+5x-3)$.

MULTIPLYING METHODS: VERTICAL (STANDARD) MULTIPLICATION

Recognizing Patterns

Below are 4 different expanded expressions. What do they have in common?

$\begin{array}{r} (x+2) \\ \cdot (x+3) \\ \hline +3x \quad +6 \\ x^2 \quad +2x \quad +0 \\ \hline x^2 + 5x + 6 \end{array}$	$\begin{array}{r} (x-2) \\ \cdot (x-3) \\ \hline -3x \quad +6 \\ x^2 \quad -2x \quad +0 \\ \hline x^2 - 5x + 6 \end{array}$
$\begin{array}{r} (x+2) \\ \cdot (x-3) \\ \hline -3x \quad -6 \\ x^2 \quad +2x \quad +0 \\ \hline x^2 - x + 6 \end{array}$	$\begin{array}{r} (x-2) \\ \cdot (x+3) \\ \hline +3x \quad -6 \\ x^2 \quad -2x \quad +0 \\ \hline x^2 + x + 6 \end{array}$

Verbalizing

Generalize what you observed above. Explain what is happening in the pattern you see.

Applying

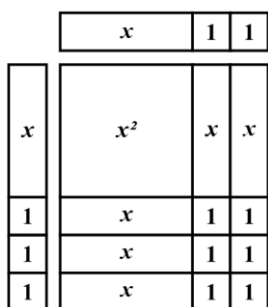
Use your generalization to multiply: $(x-2)(x^2+5x-3)$.

MULTIPLYING METHODS: GEOMETRIC AREA (ALGEBRA TILES)

Recognizing Patterns

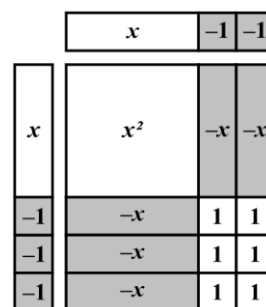
Below are 4 different expanded expressions. What do they have in common?

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



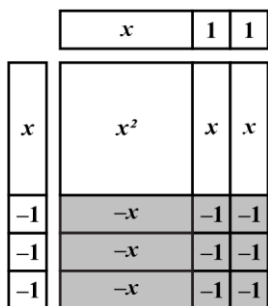
$$x^2 + 5x + 6$$

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



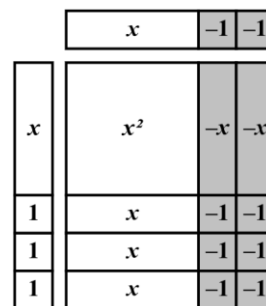
$$x^2 - 5x + 6$$

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



$$x^2 - x - 6$$

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



$$x^2 + x - 6$$

Verbalizing

Generalize what you observed above. Explain what is happening in the pattern you see.

Applying

Use your generalization to multiply: $(x-2)(x^2+5x-3)$.