For each set, first examine the problem on the left and answer the question(s) about it. Then complete the similar problem on the right.

### SET 1: Find the sum for each of the polynomials.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Kassandra's Answer</th>
<th>Your Turn:</th>
</tr>
</thead>
<tbody>
<tr>
<td>$$(4x^2 - x + 3) + (x^2 + 3x - 1)$$</td>
<td>✔</td>
<td>$$(4x^2 + 3x - 6) + (8x^2 + 3x + 9)$$</td>
</tr>
<tr>
<td>$$(4x^2 - x + 3) + (x^2 + 3x - 1)$$</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>$$(x^2 + x - 3) + (3x^2 - x + 2)$$</td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>

- Where did the +2x come from in Kassandra’s answer?

### SET 2: Find the difference for each of the polynomials.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Alta's Answer</th>
<th>Your Turn:</th>
</tr>
</thead>
<tbody>
<tr>
<td>$$(3x^2 - 4x + 8) - (x^2 - 4)$$</td>
<td>✗</td>
<td>$$(3x^2 + 4x - 8) - (x^2 - 4x)$$</td>
</tr>
<tr>
<td>$$(3x^2 - 4x + 8) - (x^2 - 4)$$</td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>$$(3x^2 - x^2 - 4x + 8 - 4)$$</td>
<td>✗</td>
<td></td>
</tr>
</tbody>
</table>

- In the step marked with an arrow, Alta did not change the signs correctly. Which term does not have the correct sign attached to it?

- Why should the sign be positive?
SET 3: Find the sum for each of the polynomials.

Eric tried to add these polynomials but didn’t do it correctly. Here is his work:

\[
\begin{align*}
(-3x^3 + 6x^2 + 4) + (8x^3 + 3x - 9) & = \quad \text{x} \\
\text{Eric made a mistake when adding the terms. What did he add incorrectly?} \\
\end{align*}
\]

\[
\begin{align*}
(-3x^3 + 6x^2 + 4) + (8x^3 + 3x - 9) & = \quad \text{5x^3 + 9x^2 - 5} \\
\text{What could Eric have done to help him figure out what terms to combine?} \\
\end{align*}
\]

Your Turn:

\[
\begin{align*}
(-3x^3 + 6x^2 + 4x) + (8x^3 - 3x + 9) \\
\end{align*}
\]

SET 4: Find the difference for each of the polynomials.

Jean-Paul subtracted these polynomials correctly. Here is his work:

\[
\begin{align*}
(x^3 + 6x^2 - x + 2x) - (9x^3 - 8x^2 + 3x) & = \quad \text{✗} \\
\text{Where did the –3x come from in the step marked with an arrow?} \\
\end{align*}
\]

\[
\begin{align*}
x^3 + 6x^2 - x + 2x - 9x^3 + 8x^2 - 3x & = \quad \text{✓} \\
-8x^3 + 14x^2 - 2x & = \quad \text{-} \\
\end{align*}
\]

Your Turn:

\[
\begin{align*}
(x^3 + 6x^2 - x^2 + 2x) - (9x^3 - 8x^2 + 3x) \\
\end{align*}
\]