Perform arithmetic operations on polynomials. Focus on polynomial expressions that simplify to forms that are linear or quadratic in a positive integer power of \( x \) (Standard A.APR.1)

**Standard A.APR.1:** Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.

### Concepts and Skills to Master
- Add, subtract and multiply polynomials.
- Understand closure of polynomials for addition, subtraction, and multiplication (for example, extend properties of arithmetic to polynomial arithmetic).

<table>
<thead>
<tr>
<th>Related Standards: Current Course</th>
<th>Related Standards: Future Courses</th>
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<tbody>
<tr>
<td>II.A.SSE.1, II.N.RN.3, II.N.CN.1, II.N.CN.2, II.F.BF.1b</td>
<td>III.N.CN.8, III.A.SSE.1, III.A.APR.2, III.A.APR.3, III.A.APR.4, III.A.APR.5, III.A.APR.6, III.A.APR.7, P.N.CN.3, P.N.CN.5, P.N.CN.10</td>
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</table>

### Support for Teachers

**Critical Background Knowledge**
- Apply properties of operations as strategies to add, subtract (1.OA.3, 2.OA.2) and multiply (3.OA.5) using the associative, commutative and distributive properties; extend to rational numbers (7.NS)
- Apply properties of operations (to combine terms) and generate equivalent expressions (6.EE.3, I.A.REI.5)
- Combine function types using arithmetic operations (I.F.BF.1b)

**Academic Vocabulary**
closure

**Resources**

*Curriculum Resources*: [https://www.uen.org/core/core.do?courseNum=5620#71472](https://www.uen.org/core/core.do?courseNum=5620#71472)