## Core Content

| **Cluster Title: Write expressions in equivalent forms to solve problems.** |
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| **Standard A.SSE.3:** Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.★<br>a. Factor a quadratic expression to reveal the zeros of the function it defines.<br>b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.<br>c. Use the properties of exponents to transform expressions for exponential functions. (For example the expression $1.15^t$ can be rewritten as $(1.15^{1/12})^{12t}$ - $1.012^{12t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.) |
| **Concepts and Skills to Master** |
| • Rewrite expressions in different forms using mathematical properties.<br>• Given a context determine the best form of an expression. |

## Supports for Teachers

| **Critical Background Knowledge** | |
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| • Understand the distributive property in simplifying and expanding expressions.<br>• Various types of factoring skills. | |
| **Academic Vocabulary** | |
| factors, coefficients, terms, exponent, base, constant, variable, binomial, monomial, polynomial | |
| **Suggested Instructional Strategies** | **Resources** |
| • Connect point-slope form to transformation of a line.<br>• Connect to the forms of a quadratic function. | |
| **Sample Formative Assessment Tasks** | |
| **Skill-Based Task:**<br>• Given a quadratic in standard form, rewrite in vertex form and list the properties used in each step.<br>• One of the factors of $0.2x^3 - 1.2x^2 - 0.6x$ Is (x-2). Find the other factors.<br>• Find multiple ways to rewrite $x^6 - y^6$.<br>• Rewrite $x^{\frac{2}{3}}$ in radical form. | **Problem Task:**<br>NCTM Horseshoes in Flight Task:<br>**http://nctm.org/standards/content.aspx?id=23749** |

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