Mathematics Assessment Program
College and Career Readiness Mathematics

Short Tasks: Arithmetic with Polynomials and Rational Expressions 1

1. Simplify $\dfrac{a^2 - b^2}{a + b}$.

2. Expand and simplify $(x^3 + 3x^2 - 2x + 5)(x - 7)$.

3. Using the Remainder Theorem, decide whether $x - 5$ and $x + 2$ are factors of the polynomial $f(x) = 2x^3 - 5x^2 - 28x + 15$.

4. 13. Identify the zeros of $f(x) = -x^2 - 3x + 4 = -(x + 4)(x - 1)$. Sketch a rough graph of f(x).