Mathematics Assessment Program
College and Career Readiness Mathematics

Short Tasks: Seeing Structure in Expressions 1

1. If x is positive and $x \neq 1$, simplify $\frac{\sqrt{x}}{x^3}$.

2. Simplify: $\sqrt{x+2} + \sqrt{4x+8}$.

3. For all real numbers x, $(3x + 2)(2x - 5) = ax^2 + kx + n$.
   Find the values of a, k, and n.

4. By factoring, find the zeros of $f(x) = x^2 + 3x - 4$.

5. By completing the square in $x^2 - 2x + 3$, find the minimum value of $f(x) = x^2 - 2x + 3$.

