Vocabulary: Simplifying Radical Expressions

Vocabulary

- Perfect square – a number that is equal to an integer squared.
  - To *square* a number means to multiply it by itself.
  - For example, 25 is a perfect square because $5 \bullet 5 = 5^2 = 25$.
- Radical expression – an expression that contains a root.
  - The *radical sign* $\sqrt{\ }$ indicates a square root, which is the inverse of squaring.
  - The number or expression under the radical sign is called the *radicand.*
    - For example, in the radical expression $\sqrt{4x^2}$, the $4x^2$ is the radicand.
- Rationalize the denominator – to rewrite a fraction with a radical expression in the denominator as an equivalent expression with no radical expression in the denominator.
  - For example, $\frac{\sqrt{3}}{\sqrt{2}}$ can be written as the equivalent fraction $\frac{\sqrt{6}}{2}$.
    - Here are the steps of rationalizing: $\frac{\sqrt{3}}{\sqrt{2}} \bullet \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{6}}{\sqrt{4}} = \frac{\sqrt{6}}{2}$
- Square root – a number or expression which, when squared, gives the original number or expression.
  - For example, the square root of 9 is 3 (in other words, $\sqrt{9} = 3$) because $3^2 = 9$.
  - Generally, the *radical sign* $\sqrt{\ }$ indicates the positive or *principal square root*.