CHAPTER 10 Radical Functions and Geometry

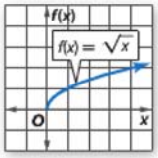
In this chapter, you will:

- Graph and transform radical functions.
- Simplify, add, subtract, and multiply radical expressions.
- Solve radical equations.
- Use the Pythagorean Theorem.
- Find trigonometric ratios.

KeyConcepts

Square Root Functions (Lesson 10-1)

- A square root function contains the square root of a variable.
- The parent function of the family of square root functions is $f(x) = \sqrt{x}$.



Simplifying Radical Expressions (Lesson 10-2)

- A radical expression is in simplest form when
  - no radicands have perfect square factors other than 1,
  - no radicals contain fractions,
  - and no radicals appear in the denominator of a fraction.

Operations with Radical Expressions and Equations (Lessons 10-3 and 10-4)

- Radical expressions with like radicals can be added or subtracted.
- Use the FOIL method to multiply radical expressions.

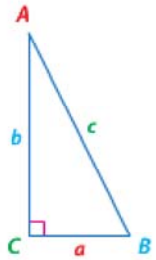
Pythagorean Theorem and Trigonometric Ratios (Lessons 10-5 and 10-6)

Pythagorean Theorem $c^2 = a^2 + b^2$

$\sin A = \frac{a}{c}$

$\cos A = \frac{b}{c}$

$\tan A = \frac{a}{b}$



KeyVocabulary

- conjugate (p. 630)
- converse (p. 649)
- cosine (p. 656)
- Distance Formula (p. 654)
- extraneous solution (p. 653)
- hypotenuse (p. 648)
- inverse cosine (p. 658)
- inverse sine (p. 658)
- inverse tangent (p. 658)
- legs (p. 648)
- midpoint (p. 654)
- Pythagorean triple (p. 649)
- radical equation (p. 642)
- radical expression (p. 628)
- radical function (p. 621)
- radicand (p. 621)
- rationalizing the denominator (p. 630)
- sine (p. 656)
- solving the triangle (p. 657)
- square root function (p. 621)
- tangent (p. 656)
- trigonometric ratio (p. 656)
- trigonometry (p. 656)