

Now

In Chapter 6, you will apply the big ideas listed below and reviewed in the Chapter Summary on page 465. You will also use the key vocabulary listed below.

Big Ideas

- 1 Using rational exponents
- 2 Performing function operations and finding inverse functions
- 3 Graphing radical functions and solving radical equations

KEY VOCABULARY

- n th root of a , p. 414
- index of a radical, p. 414
- simplest form of a radical, p. 422
- like radicals, p. 422
- power function, p. 428
- composition, p. 430
- inverse relation, p. 438
- inverse function, p. 438
- radical function, p. 446
- radical equation, p. 452

Why?

You can use a radical function to model the time you are suspended in the air during a jump. For example, the hang time of a basketball player can be modeled by a radical function.

Animated Algebra

The animation illustrated below for Exercise 60 on page 458 helps you answer this question: What is the relationship between the height of a jump and the time the jumper is suspended in air?

The screenshot shows an interactive learning tool. On the left, a basketball player in an orange jersey is jumping. Below the player is a green wireframe model of a person in a jumping pose. A 'Start' button is visible. Below the wireframe, text reads: 'The hang time of a jump depends on the height of a jump.'

On the right, there are two graphs side-by-side. Each graph plots height h (feet) on the vertical axis and hang time t (sec) on the horizontal axis. The left graph shows a curve starting at the origin and passing through the point (0.87, 3.00). The right graph shows a similar curve passing through the point (0.79, 2.50). Below the graphs, there is a question: 'Observe the graphs above. Which of the following statements is correct?' followed by three radio button options: 'If the height of the jump quadruples, the hang time does not change.', 'If the height of the jump quadruples, the hang time doubles.', and 'If the height of the jump quadruples, the hang time quadruples.' A 'Check Answer' button is also present. Below the question, text reads: 'Choose several jump heights and see the hang times plotted on a graph.'

Algebra at www.publisher.com

Animated Algebra at classzone.com

Other animations for Chapter 6: pages 431, 444, 448, and 465