

Now

In Chapter 3, you will apply the big ideas listed below and reviewed in the Chapter Summary on page 221. You will also use the key vocabulary listed below.

Big Ideas

- 1 Solving systems of equations using a variety of methods
- 2 Graphing systems of equations and inequalities
- 3 Using matrices

KEY VOCABULARY

- system of two linear equations, *p.* 153
- consistent, *p.* 154
- inconsistent, *p.* 154
- independent, *p.* 154
- dependent, *p.* 154
- substitution method, *p.* 160
- elimination method, *p.* 161
- system of linear inequalities, *p.* 168
- system of three linear equations, *p.* 178
- ordered triple, *p.* 178
- matrix, *p.* 187
- determinant, *p.* 203
- Cramer's rule, *p.* 205
- identity matrix, *p.* 210
- inverse matrices, *p.* 210

Why?

You can use systems of linear equations to solve real-world problems. For example, you can determine which of two payment options for riding a bus is more cost-effective.

Animated Algebra

The animation illustrated below for Example 4 on page 155 helps you answer this question: After how many bus rides will the cost of two payment options be the same?

The screenshot shows an interactive algebra problem. On the left, there is a bus stop sign and a bus. Below it, the text reads: "You want to decide whether to pay for bus rides individually or buy a monthly pass." A "Start" button is visible. On the right, the problem is presented: "Option A is \$1.00 per ride plus a \$30 monthly pass. Option B is \$2.50 per ride with no monthly pass. How many rides must you take in a month so that the total cost of the two options is the same?" Below this, there are input fields for linear equations: "Option A: $y = \square x + \square$ " and "Option B: $y = \square x$ ". A "Check Answer" button is present. At the bottom, instructions state: "Enter linear equations to compare the costs of the two payment options."

Animated Algebra at classzone.com

Other animations for Chapter 3: pages 161, 168, 196, and 211