UNIT 1 • RELATIONSHIPS BETWEEN QUANTITIES AND EXPRESSIONS
Lesson 1: Working with Radicals and Properties of Real Numbers

Scaffolded Practice 1.2.1

Example 1

Kolya wants to find out how many textbooks his class has in total. He has discovered that each student has an average of 5 textbooks. There are 30 people in his class. How many textbooks does his class have in total?

1. Identify important quantities and their associated units.

2. Identify the units of the answer being sought.

3. Convert the units.

continued

UNIT 1 • RELATIONSHIPS BETWEEN QUANTITIES AND EXPRESSIONS
Lesson 1: Working with Radicals and Properties of Real Numbers

Example 2

How many seconds are there in 1 day?

Example 3

Gemma is visiting friends in the U.S. She wants to make her famous mince pies, but her recipe lists most of the ingredients in grams. Use the chart to convert all the given measurements to U.S. units.

Ingredients:

225 grams cold butter, diced

340 grams plain flour

110 grams golden caster sugar

300 grams mincemeat

1 small egg

5 grams powdered sugar

Conversion Factors

U.S.	Metric
1 stick butter	113 grams
1 cup	225 grams
1 pound	455 grams
1 teaspoon	5 grams

UNIT 1 • RELATIONSHIPS BETWEEN QUANTITIES AND EXPRESSIONS
Lesson 1: Working with Radicals and Properties of Real Numbers

Example 4

The owners of a company that makes electric heaters would like to upgrade the company's production equipment to become more profitable. They have asked two separate financial analysts to help them plan the upgrade schedule. Each analyst devised a different plan, which resulted in different profit predictions. Below are visual representations of the analysts' predictions for yearly net profit after the upgrade. Which prediction predicts a higher profit in 2021?

Chart 1 — Profit (in millions of dollars) vs. Year. Actual (2012–2016), Projection (2017–2021).

Chart 2 — Heaters produced (in thousands) vs. Year. Actual, Profit per heater: $20. Projection, Profit per heater: $50.