FORMULAS A **formula** is an equation that relates two or more quantities. You may find it helpful to use formulas in problem solving.

KEY CONCEPT | *For Your Notebook*

Formulas

Temperature

$C = \frac{5}{9}(F - 32)$ where F = degrees Fahrenheit and C = degrees Celsius

Simple interest

$I = Prt$ where I = interest, P = principal, r = interest rate (as a decimal), and t = time

Distance traveled

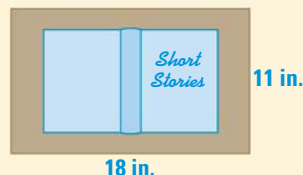$d = rt$ where d = distance traveled, r = rate (constant or average speed), and t = time

Profit

$P = I - E$ where P = profit, I = income, and E = expenses

REVIEW FORMULAS
For additional formulas, see pp. 924–928 and the Table of Formulas on pp. 952–953.

TAKS

EXAMPLE 3 **TAKS PRACTICE: Multiple Choice**

You are making a leather book cover. You need a rectangular piece of leather as shown. Find the cost of the piece if leather costs $.25 per square inch.

Short Stories **11 in.**
18 in.

ELIMINATE CHOICES
You can eliminate choices A and D by estimating. The area of the piece of leather is about 200 square inches, and $.25(200) is about $50.

(A) $14.50 (B) $49.50
(C) $58.00 (D) $198.00

Solution

Use the formula for the area of a rectangle, $A = \ell w$, with $\ell = 18$ inches and $w = 11$ inches.

$A = \boldsymbol{\ell w}$ **Write area formula.**

   $= \boldsymbol{18}(11)$ **Substitute 18 for ℓ and 11 for w.**

   $= 198$ **Simplify.**

The area is 198 square inches, so the total cost is $.25(198) = $49.50.

▶ The correct answer is B. (A) (B) (C) (D)

✓ **GUIDED PRACTICE**   **for Example 3**

2. **GARDENING** A gardener determines the cost of planting daffodil bulbs to be $2.40 per square foot. How much will it cost to plant daffodil bulbs in a rectangular garden that is 12 feet long and 5 feet wide?

(A) $40.80   (B) $60   (C) $81.60   (D) $144

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