

METHOD 2

Reinterpret Problem Another alternative approach is to reinterpret the problem.

STEP 1 Reinterpret the problem. A mixture with 80% yellow paint means that $\frac{4}{5}$ of the mixture is yellow and $\frac{1}{5}$ of the mixture is blue. So, the ratio of yellow paint to blue paint needs to be 4 : 1. You need 4 times as many pints of yellow paint as pints of blue paint.

STEP 2 Write a verbal model. Then write an equation. Let p represent the number of pints of yellow paint that you need to add.

Pints of yellow paint already in mixture	+	Pints of yellow paint you need to add	=	$4 \cdot$	Pints of blue paint in mixture
↓		↓			↓
4	+	p	=	$4 \cdot$	4

STEP 3 Solve the equation.

$$4 + p = 4 \cdot 4 \quad \text{Write equation.}$$

$$4 + p = 16 \quad \text{Multiply.}$$

$$p = 12 \quad \text{Subtract 4 from each side.}$$

▶ You need to add 12 pints of yellow paint to the mixture.

PRACTICE

- INVESTING** Jill has \$10,000 in various investments, including \$1000 in a mutual fund. Jill wants the amount in the mutual fund to make up 20% of the amount in all of her investments. How much money should she add to the mutual fund? Solve this problem using two different methods.
- ERROR ANALYSIS** Describe and correct the error in solving Exercise 1.
- BASKETBALL** A basketball player has made 40% of 30 free throw attempts so far. How many consecutive free throws must the player make in order to increase the percent of free throw attempts made to 50%? Solve this problem using two different methods.
- WHAT IF?** In Exercise 3, suppose the basketball player instead wants to increase the percent of free throw attempts made to 60%. How many consecutive free throws must the player make?

Amount in mutual fund	Amount in all investments	Percent in mutual fund
1000	10,000	10%
1400	10,400	About 13%
1800	10,800	About 17%
2250	11,250	20%

Jill needs to add \$2250 to her mutual fund.

- SNOW SHOVELING** You and your friend are shoveling snow out of a driveway. You can shovel the snow alone in 50 minutes. Both of you can shovel the snow in 30 minutes when working together. How many minutes will your friend take to shovel the snow alone? Solve this problem using two different methods.