MORE PRACTICE SOLVING PROBLEMS WITH EQUATIONS

1. To make lower-fat chocolate frozen yogurt, chocolate milk containing 2% butterfat is needed. To obtain the required percentage of butterfat, chocolate milk containing 4% butterfat is mixed with 500 litres of chocolate milk containing 1% butterfat.

(a) Without performing any calculations, predict whether the mixture will contain more of the 1% chocolate milk or more of the 4% chocolate milk. Explain.

(b) How many litres of the 4% chocolate milk are needed to create the required mixture? What is the total volume of the mixture?

Solution

Let x represent the number of litres of the 4% chocolate milk that must be mixed with 500 L of the 1% chocolate milk to produce a mixture containing 2% butterfat.

Type of Chocolate Milk	*Volume (L)*	*Amount of Butterfat in Given Volume (L)*
1% butterfat	500	
4% butterfat	x	
2% butterfat mixture		

(c) Does your answer in part (b) agree with the prediction that you made in part (a)? What can you conclude from this?