



Objective 2 TEKS A.3.A Review

A.3.A Use symbols to represent unknowns and variables.

When you use algebra to model real-life situations, variable expressions can represent unknown or variable quantities in the situation.

For example, suppose you want to represent the perimeter and area of a square whose side length can vary. The chart shows how you can use the length of the side of the square to represent its perimeter and area.

Unknown or variable quantity	Variable expression
Length of side of a square	s
Perimeter of the square	$4s$
Area of the square	s^2

EXAMPLE

In a group of 7 hikers, each hiker is carrying an average of x pounds. In another group of 4 hikers, each hiker is carrying an average of y pounds. What expression represents the average weight carried by all the hikers?

Each hiker in the first group carries an average of x pounds, so the 7 hikers carry a total of $7x$ pounds.

Each hiker in the second group carries an average of y pounds, so the 4 hikers carry a total of $4y$ pounds.

The 11 hikers together carry $7x + 4y$ pounds. This is an average of $\frac{7x + 4y}{11}$ pounds per hiker.

Therefore, $\frac{7x + 4y}{11}$ represents the average weight that each hiker carries.

YOU DO IT

The average height of the 4 freshmen on the varsity basketball team is u inches. The average height of the 11 freshman on the junior varsity basketball team is v inches. What expression represents the average height in inches of the 15 freshman players?

The 4 freshmen on the varsity team have an average height of _____ u _____ inches.

These 4 freshmen have a combined height of _____ $4u$ _____ inches.

These 11 freshmen on the junior varsity team have an average height of _____ v _____ inches.

These 11 freshmen have a combined height of _____ $11v$ _____ inches.

The 15 freshmen players have a combined height of _____ $4u + 11v$ _____ inches.

The average height of the 15 freshman players is _____ $\frac{4u + 11v}{15}$ _____ inches.