

Section 3.5 Linear Equations and Problem Solving

See the examples in the book.

Always identify your variables and show each step. These are word problems and it takes practice to learn how to do them well.

Example: Jim can run 11ft/sec and Sarah can run 13ft/sec. How far ahead of Sarah must Jim start to not fall behind Sarah in the first 15 seconds?

Verbal Model

Jim's Head Start

 +

Jim's Speed

 *

time

 =

Sarah's Speed

 *

time

Labels x + 11 * 15 = 13 * 15

Equation: $x + (11)(15) = (13)(15)$

$$x + 165 = 195$$

$$- 165 \quad -165$$

$$x = 30$$

Subtract 165 from both sides

Write the answer as a complete sentence: **Jim would have to be 30 feet ahead of Sarah for her not to pass him in the first 15 seconds.**