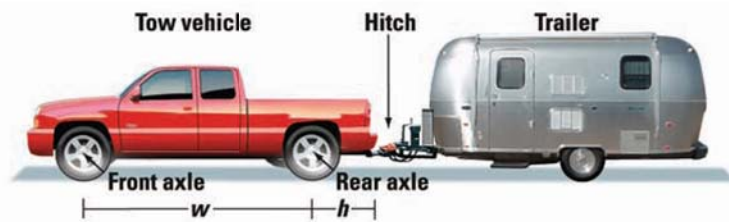48. ◆ **TAKS REASONING** The axle load for a tow vehicle is the weight (in pounds) that an axle on the vehicle supports. The rear axle load R and the front axle load F are given by the formulas

$$R = \frac{t(w + h)}{w} \qquad \text{and} \qquad F = \frac{th}{w}$$

where t represents the weight (in pounds) that presses down on the hitch by a trailer and w and h represent the distances (in feet) shown.

a. **Calculate** For a certain tow vehicle, $t = 300$, $w = 9$, and $h = 3.5$. Find the rear axle load and the front axle load.

b. **Compare** Find the difference of the rear axle load and the front axle load found in part (a). *Compare* your answer with the given value of t.

c. **Model** Write an equation that gives t in terms of R and F. *Justify* your answer algebraically.

49. **CHALLENGE** You and your friend plan to spend 10 minutes mowing your family's lawn together. You can mow the entire lawn alone in 30 minutes.

a. Write an equation that gives the fraction y of the lawn that you and your friend can mow in 10 minutes as a function of the time t (in minutes) that your friend can mow the entire lawn alone.

b. Suppose your friend can mow the entire lawn alone in 20 minutes. Can the entire lawn be mowed if you and your friend work together for 10 minutes? *Explain.*

MIXED REVIEW FOR TAKS

50. ◆ **TAKS PRACTICE** Simplify the algebraic expression $(x + 2)[(2x - 3) - (x - 1)]$.
TAKS Obj. 2

Ⓐ $x^2 - 4x - 4$　　Ⓑ $x^2 - 2x - 8$　　Ⓒ $x^2 - 4$　　Ⓓ $2x^2 - 3x - 7$

51. ◆ **TAKS PRACTICE** Segment PR was transformed to create segment $P'R'$, as shown in the graph. What transformation was used? *TAKS Obj. 6*

Ⓕ Translation of 2 units to the right

Ⓖ Translation of 6 units to the right

Ⓗ Reflection across the y-axis

Ⓙ Reflection across the x-axis