8.1 Application Problems

Solve.

1. A park fountain has two sprinklers which are used to fill a fountain. One sprinkler can fill the fountain in 3 h, while the second sprinkler can fill the fountain in 6 h. How long will it take to fill the fountain with both sprinklers operating?

2. A new printing press can complete the weekly edition of a news magazine in 10 h. An older printing press requires 15 h to do the same task. How long would it take to print the weekly edition with both presses operating?

3. One member of a gardening crew can mow a lawn in 20 min, while the second member of the crew requires 30 min to mow the same lawn. How long would it take to mow the lawn when they work together?

4. Two farmers are plowing a field. One farmer, using an old tractor and working alone, requires 12 h to plow the field. A second farmer, using a modern tractor, can plow the same field in 4 h. How long would it take to plow the field with both tractors working together?

5. A business report for a company can be printed in 55 min using one computer. A second computer can print the report in 66 min. How long will it take to print the report with both computer's operating?

6. A small air conditioner will cool a room 5° in 75 min. A larger air conditioner will cool the room 5° in 50 min. How long would it take to cool the room 5° with both air conditioners operating?

7. A new machine can fill soda bottles three times faster than an old machine. With both machines working together, they can complete the task in 9 h. How long would it take the new machine working alone to complete the task?

8. An experienced painter can paint a fence twice as fast as an inexperienced painter. Working together, the painters require 4 h to paint the fence. How long would it take the experienced painter working alone to paint the fence?

9. A plumber can install a garbage disposal in 45 min. With the plumber's assistant helping, the task would take 30 min. How long would it take the assistant working alone to complete the task?

10. A mason can construct a retaining wall in 10 h. With the mason's apprentice assisting, the task would take 6 h. How long would it take the apprentice working alone to construct the wall?