

## Section 7.4 Focus Exercises

(These need to be done on a separate piece of paper.)

**For each, set up a legend, use the chart outlined in this section, and write a sentence answering the question.**

### Type 1:

1. For the sake of flood control, each year the lake behind a dam must be lowered. Sometimes, only the east pump is used; it can lower the water level 3 feet every 8 hours. Sometimes, only the west pump is used; it can lower the lake's level 1 foot every four hours. Occasionally, both pumps must be used. How long would it take to lower the lakes level 15 feet if both pumps are used at the same time?
2. It's the 1950's and Nicholas and Marilyn are addressing invitations to the junior class picnic. Nick, as he prefers to be called, can address 2 every minute whereas Marilyn, no not Monroe, can address 3 every 2 minutes. How long will it take them to address all 140 invitations? Also, who is Nick planning to ask to go with him to the picnic? And, do you think Marilyn should dye her hair blonde like movie idol Miss Monroe?
3. In a high-rise office building a crew of workers comes in nightly to clean. Sam's crew can clean 3 floors in 9 hours. When Sam's crew works with Raime's crew, they can—together—clean 5 floors in 6 hours. How long would it take Raime's crew to clean 2 floors by itself?
4. Miles and Pete are on the crew of a large sailing vessel. Pete can tie 18 knots in 30 minutes. Together, Pete and Miles can tie 21 knots just 20 minutes. How long would it take Miles to tie 27 knots?

### Type 2:

5. A hose can fill a trough in 5 minutes. The trough has a drain plug that, when open, can drain the full trough in 15 minutes. If the trough is empty, and the drain plug is accidentally left opened, how long would it take the hose to fill the trough?
6. During the winter, Jim's Wood Farm provides fire wood to the many residents in his mountain top village. Jim's crew can fill an entire bin in 2 days, but the villagers can buy enough wood to empty the bin in 3 days. If the bin gets empty, and Jim's crew works to fill it while the residents continue to buy it, in how many days will it take Jim's crew to fill the bin again.

### Type 3:

7. Brett usually takes 1 hour and 40 minutes (100 minutes) to groom the horses, and Angela, by herself, can groom the horses in 2 hours and 30 minutes (150 minutes). Working together, how long would it take Brett and Angela to groom the horses?
8. It takes Jim 6 hours to plow the cornfield with his new tractor. It takes his son Ke-Shawn 12 hours in the old tractor. Working together, how long would it take Jim and Ke-Shawn to plow the cornfield?
9. One pump can fill a water tank in 20 hours, and another can fill it in 12 hours. Working together, how long would it take both pumps to fill the tank?
10. Executive Pool Service has an account with all of the Hilton Hotels in the area to clean their pools. One crew member, Mike, can clean a typical Hilton pool in 100 minutes. When working together, Mike and Jake can clean a Hilton pool in 30 minutes. How long would it take Jake to clean a Hilton pool by himself?
11. It takes Dominic 3 hours to do all of the gardening in the Miller's yard. When working together, Dominic and Luis can do the Miller's yard in 1 hour. How long would it take Luis to do the Miller's yard working alone?
12. It takes the left side hose twice as long to fill a pool as it does the right side hose. When working together, the hoses can fill the pool in 4 hours. How long would it take each hose to fill the pool by itself?
13. It take Carla 3 times as long as Jenny to wash the car. If together they can wash the car in 6 minutes, how long will it take Jenny and Carla to each wash the car by herself?
14. Mario and Luigi own an ice cream parlor. Whoever stays late to close the store must also clean it completely. Sometime Mario closes the store, sometimes it's Luigi, and sometimes they close the store together. It takes Mario three times as long as Luigi to clean the whole store by himself. When they clean it together, they can do it in 30 minutes. How long does it take each to clean the store by himself?