



Problem of the Week

Problem C and Solution

Lawn Care



Problem

Lawns 'R' Us is a company that specializes in lawn care. When mowing lawns, they use both a powerful riding lawn mower and a push lawn mower. For a certain lawn, it takes the company 3 hours to cut the entire lawn using the push lawn mower only, and 40 minutes to cut the entire lawn using the powerful riding lawn mower only.

One day, the powerful riding lawn mower broke down after 90% of the lawn was cut. The remainder was then cut using the push lawn mower.

How many minutes did it take the company to cut the entire lawn?

Solution

It takes the company 40 minutes to cut 100% of the lawn with the powerful riding lawn mower. Therefore, it would take 90% of 40 minutes or $0.90 \times 40 = 36$ minutes to cut 90% of the lawn with the powerful riding lawn mower.

Since 90% of the lawn is cut with the powerful riding lawn mower, then $100\% - 90\% = 10\%$ of the lawn remains to be cut with the push lawn mower. It takes 3 hours or $3 \times 60 = 180$ minutes to cut 100% of the lawn with the push lawn mower. Therefore, it would take $0.10 \times 180 = 18$ minutes to cut 10% of the lawn with the push lawn mower.

Therefore, it would take a total of $36 + 18 = 54$ minutes to cut the entire lawn using the powerful riding lawn mower for 90% of the job and the push lawn mower for 10% of the job.