Problem of the Week
Problem A and Solution
Puppy Plans

Problem

Robbie wants to get a puppy, so he decides to help pay the costs. He wants to donate $60 to the animal shelter he gets the puppy from, and he needs to contribute $10 every month to help buy the puppy's food.

(a) How much money does Robbie need to help pay the cost of getting the puppy and feeding the puppy in the first year?

(b) Robbie needs to save the money calculated in part (a) before getting the puppy. He has $87 in his piggy bank. He earns a $7 allowance every week for doing his chores. How long will it take Robbie to earn the rest of the money he needs?

Solution

(a) Since there are 12 months in a year and Robbie wants to contribute $10 each month, he needs $12 \times 10 = \$120$ for puppy food in the first year. Counting the shelter donation, Robbie needs $\$60 + \$120 = \$180$ in total.

(b) We can make a table to calculate how long it will take for Robbie to save enough money to have at least $180. He starts with $87 and will increase his total by $7 each week.

Week	Total Saved (in $)
0	87
1	94
2	101
3	108
4	115
5	122
6	129
7	136
8	143
9	150
10	157
11	164
12	171
13	178
14	185

So it will take Robbie 14 weeks to earn enough money to help cover the shelter donation and the costs of feeding the puppy in the first year.

Alternatively, since Robbie has already saved $87, he needs to earn $180 - \$87 = \$93$ more. We calculate how long it will take to earn the remaining amount using division. Since $93 \div 7 = 13$ with a remainder of 2, we round up to determine that it will take 14 weeks to earn the additional $93 Robbie needs.