



## Problem of the Week

### Problem B and Solution

#### A Feline Puzzle

#### Problem

Mrs. Murphy takes her two cats to the veterinarian in a pet carrier which weighs 2.1 kg. Her older cat, Chuckles, weighs 1 kg more than her younger cat, Shorty. When the vet weighs both cats in their carrier, the scale registers 11.3 kg.

How much does each cat weigh?

#### Solution

We know that the combined weight of the two cats is equal to the total weight of the two cats and the carrier minus the weight of the carrier. That is, the combined weight of the two cats is  $11.3 - 2.1 = 9.2$  kg.

The 9.2 kg is made up of Shorty's weight plus Chuckles' weight. If Chuckles were 1 kg lighter, he would be the same weight as Shorty. So two times the weight of Shorty would be  $9.2 - 1 = 8.2$  kg.

Then, Shorty's weight would be  $8.2 \div 2 = 4.1$  kg.

Since Chuckles weighs 1 kg more than Shorty, Chuckles weighs  $4.1 + 1 = 5.1$  kg.

We can verify our answer by adding Shorty's weight, Chuckles' weight and the weight of the carrier. Then,  $4.1 + 5.1 + 2.1 = 11.3$  kg, the given total weight.

Therefore, Shorty weighs 4.1 kg and Chuckles weighs 5.1 kg.

