



## Problem of the Week

### Problem A and Solution

#### Age Action

#### Problem

Marty is ten years old. His grandfather is seven times his age. Marty's mother is half the age of his grandfather.

- A) How old is Marty's mother?
- B) How many decades old is Marty's grandfather?



#### Solution

- A) Since Marty's grandfather is seven times his age, his grandfather's age is  $7 \times 10 = 70$  years. Since Marty's mother is half his grandfather's age, his mother's age is  $70 \div 2 = 35$  years.
- B) Since one decade is 10 years, Marty's grandfather is  $70 \div 10 = 7$  decades old.





## Teacher's Notes

When describing quantities, we have many choices for units of measurement. In this example, the grandfather's age was described in years and decades. However, we could have described Marty's age in weeks, day, hours, or even seconds. When we select a unit of measurement, we want to choose units that fit the value being measured. It is often easier for us to understand relatively small quantitative values. For example, we might describe a new baby as being five weeks old. However, we are unlikely to say something like "Marty is 536 weeks old".

We also choose units based on the precision we require in the measurement. For example, we would not describe the distance between the cities Halifax and Yellowknife in millimetres. But we do use millimetres to describe amounts of rainfall.

It is also important that we choose units that are well known to those with whom we are communicating. We might talk about a fortnight to a tennis fan. North American news reports describe some lengths in terms of a number of football fields. An equestrian would know if a horse that is 12 hands tall is big or small. However there are many people in the world who would not know that a fortnight is 14 days, an American football field is 100 yards, and a hand is 4 inches.

