

## Age Problems

Problems involving the age of various people are always interesting. They occur in all algebra books and have family relationships.

Ex.

Jerry is 10 times older than his daughter Carrie, but in 5 years he will be 5 times as old as Carrie. How old are they today?

Since Carrie is the youngest, let's allow  $x$  to be her age now  
Then Jerry's age now is  $10x$

In five years, Carrie's age is  $x + 5$  and Jerry's age is  $10x + 5$

We know in 5 years Jerry's age ( $10x + 5$ ) is 5 times Carrie's age ( $x+5$ ) so we write

$$10x + 5 = 5(x + 5) \text{ and solve}$$

$$10x + 5 = 5x + 25 \quad \text{subtract 5 from both sides}$$

$$10x = 5x + 20 \quad \text{subtract } 5x \text{ from both side}$$

$$5x = 20 \quad \text{divide by 5}$$

$$x = 4 \quad \text{today Carrie is 4 years old and Jerry is 40}$$

years old ( $10x$ )