

MATHLISH

The most difficult part of word problems is converting from the language of English to the language of Mathematics. It is often difficult to go directly from written sentences to equations. This sheet presents "Mathlish", which is a mixture of English and Mathematics. Sometimes you cannot make the big jump directly from English to Mathematics, but you may be able to make the smaller jumps from English to Mathlish and then from Mathlish to Mathematics.



The following examples show the use of Mathlish. In each case, Mathlish is shown in dark print.

Example 1

A 22 inch rope is to be cut into two pieces so that one piece is 3 inches longer than twice the other. How long is each piece?

$$\begin{array}{rcl}
 \text{length of short piece} + \text{length of long piece} & = & \mathbf{22 \text{ inches}} \\
 x + y & = & 22 \\
 \\
 \text{long piece} & = & \mathbf{3" \text{ more than 2 times short piece}} \\
 \text{long piece} & = & \mathbf{3 + 2 \text{ (short piece)}} \\
 y & = & 3 + 2x
 \end{array}$$

Example 2

For a Saturday matinee, adult tickets cost \$5.50 while children under 12 pay only \$4.00. If 70 tickets are sold for a total of \$310, how many of the tickets were adult tickets and how many were sold to children under 12?

Note that we are concerned with both the number of tickets and the value of the tickets. The Mathlish must show this important distinction.

$$\begin{array}{rcl}
 \text{number of adult tickets} + \text{number of children's tickets} & = & \mathbf{70} \\
 x + y & = & 70 \\
 \\
 \text{money from adult tickets} + \text{money from children's tickets} & = & \mathbf{\$310} \\
 5.50x + 4.00y & = & \$310
 \end{array}$$

Example 3

Dave is twice as old as Rick. Ten years ago the sum of their ages was 40. How old are they now.

Note that we are concerned with their ages now and their ages ten years ago. The Mathlish must show clearly whether we are considering now or ten years ago.

$$\begin{array}{rcl}
 \text{Dave's present age} & = & \mathbf{2 \text{ times Rick's present age}} \\
 y & = & 2x \\
 \\
 \text{Rick's previous age} + \text{Dave's previous age} & = & \mathbf{40} \\
 (x - 10) + (y - 10) & = & 40
 \end{array}$$



