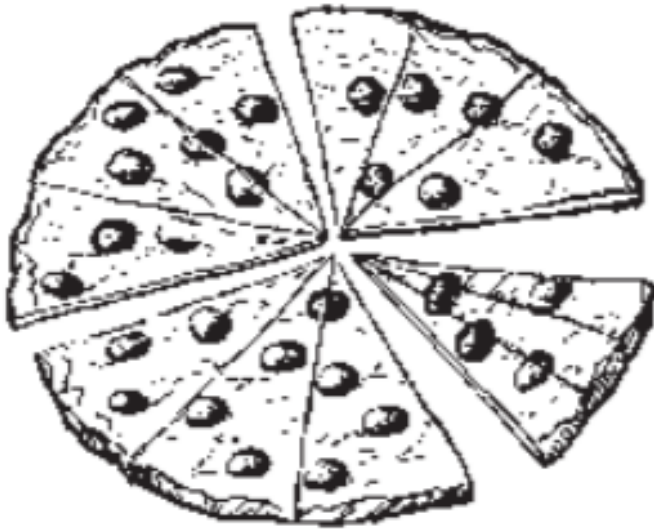


Problem

Three hungry boys divide 10 pieces of pizza equally among themselves. How many pieces of pizza did each boy eat?



$$3 \overline{)10} \begin{array}{r} 3 \frac{1}{3} \\ \underline{9} \\ 1 \end{array} \quad \text{or} \quad 3 \overline{)10} \begin{array}{r} 3 \text{ R}1 \\ \underline{9} \\ 1 \end{array}$$

Source: clp.org



Problem

Thirteen boys are divided into two groups for a soccer match. How many boys are in each group?



$$\begin{array}{r} 6 \frac{1}{2} \\ 2 \overline{)13} \\ \underline{12} \\ 1 \end{array}$$

or

$$\begin{array}{r} 6 \text{ R}1 \\ 2 \overline{)13} \\ \underline{12} \\ 1 \end{array}$$

Source: clp.org



Division

The most extensive documentation of students' performance on word problems, without understanding, comes from the third National Assessment of Educational Progress (NAEP; Carpenter, Lindquist, Matthews, & Silver, 1983). On the NAEP mathematics exam, which used a stratified national sample of 45,000 students, 13-year-olds were given the following problem: "An army bus holds 36 soldiers. If 1,128 soldiers are being bused to their training site, how many buses are needed?" Seventy percent of the students who worked the problem performed the long division algorithm correctly. However, 29% of the students wrote that the number of buses needed is "31 remainder 12" and another 18% wrote that the number of buses needed is 31. Only 23% gave the correct answer. Thus fewer than one third of the students who selected and carried out the appropriate algorithm produced the right answer—a step that required a trivial analysis of the meaning of the problem statement. There are a number of plausible explanations for this behavior, one of which will be suggested in the case study described in the sequel (see also Silver, 1986, for a discussion of

Source: Schoenfeld (1988)



Writing Division Problems

Write three different (but realistic) division word problems for which **the answer** to the problem is

(a) the quotient.

(b) the remainder.

(c) one more than the quotient.



Writing Division Problems

Write three different (but realistic) division word problems for which **the answer** to the problem is

(a) the quotient.

Flora has 25 yards of fabric. She is making dresses that require 4 yards of fabric. How many dresses can she make?

(b) the remainder.

Ann is making cards for her grandmother. She has 23 stickers total and uses 4 stickers per card. Once she makes all of her cards, how many stickers will Ann have left?

(c) one more than the quotient.

Twenty people are waiting for the airport shuttle. The shuttle can hold 8 people total. How many trips will the shuttle need to make?

