

Lecture 6-8 Mental Math and Word problems

[2 days, all of chp. 3]

Mental math

- Using distributive property

$$108 \times 6 = (100 + 8) \times 6 = 600 + 48 = 648$$

$$165 \div 15 = (150 + 15) \div 15 = 10 + 1$$

$$410 \div 13 = \left(\begin{array}{l} \text{Think } 30 \text{ } 13\text{'s makes } 390, \\ \text{1 } \quad \quad \text{makes } 403 \\ \text{7 remain} \end{array} \right)$$

$$= 31 \text{ R } 7$$

- Compensation:

$$\text{for } + : \quad 87 + 56 = \overset{+3}{87} + 56 = 100 + 43 = 143$$

$$\text{for } - : \quad 87 - 56 = 81 - 50 = 31$$

$$\text{for } \times : \quad 25 \times 36 = (25 \times 4) \times 9 = 3600$$

$$\text{for } \div : \quad 204 \div 6 = 102 \div 3 =$$

$$\downarrow \\ (90 + 12) \div 3 = 30 + 4$$

Word Problems

Should be

- Short, Clear, Succinct
- Interesting but not Flowery
- Realistic but not contrived
- Self contained and well defined

(SAY: \downarrow There may be many ways to answer, but only one, or at most, several specific answers)

in sets which

- are varied in context (different models, etc.), not underlying math.
- build up 1 step \rightarrow 2 step \rightarrow Multi-step.

We will do many word problems:

Examples :

Note to instructor: Do selection from Sing 3A pgs. 66 - 67.

- Do some at top of page by mental Math.
- Do some word problems (w/ T.S.)
For div. prob, ask for interpretation.

Teacher's Solutions (Graded on this criteria)

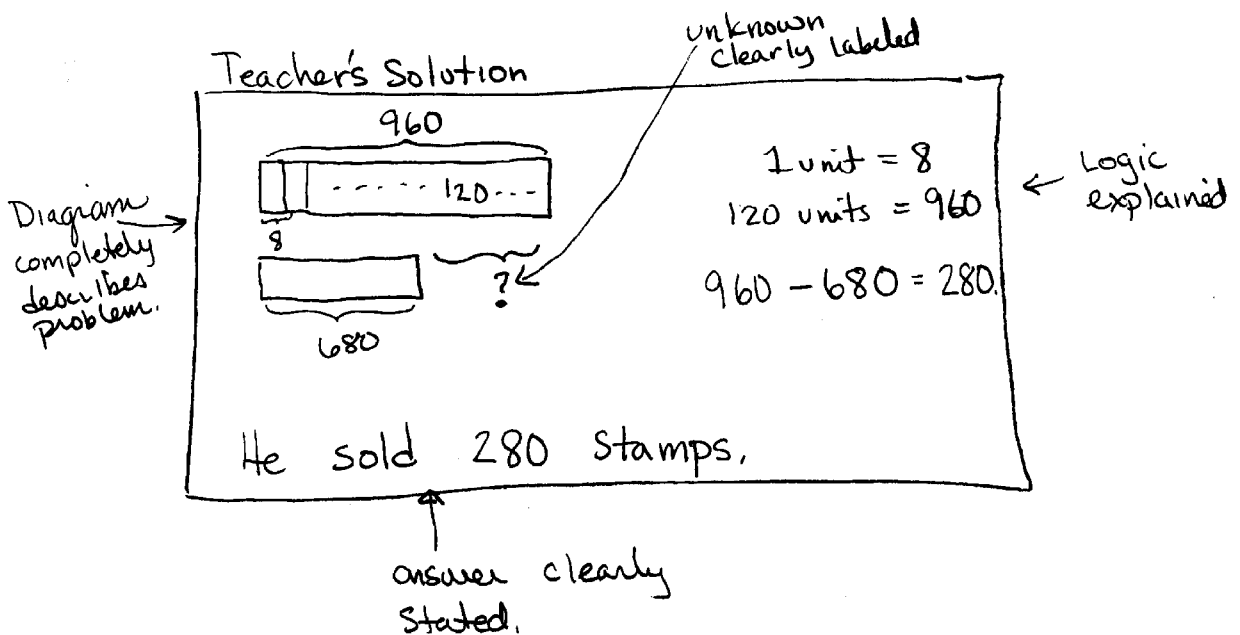
Example

There are 8 stamps in a set.

Gopal bought 120 sets.

After selling some stamps, he had 680 left.

How many did he sell?



Have students do problems 7-9 on pg 90
Sing 3A time permitting. Have students present
Teacher's Solutions (T.S.).

HW Do HW set HW set 6. Read § 2.2 & § 2.3,
then do HW set 7. Bring Sing 3A & 5A to
next class.

(*) Note to instructor:

- Put students in pairs of 2, divide class into 3 sets.
- Assign 3 problems at a time, one to each $\frac{1}{3}$ of the class.
- Give only 2-3 minutes — strictly timed.
- While std's work, write questions on the Blackboard.
- Select 3 pairs of students to go up and present Teacher's soln.

Do Sing 3A; pg 54 prob 10-12

pg 55 prob 9-11

pg 56 prob 9-11 if time

Multistep Word problems combine 2 different operations — The most interesting cannot be classified as a $+$, $-$, \times , \div problem.

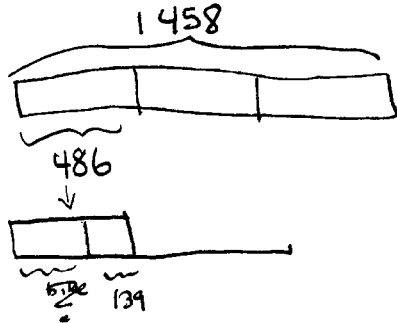
Do Sing 5 as in (*), pg

Book 5A, pg 22-23

- Go over pg 22.
- Work thru #1-3 with class
- Groups of 2 for #1-4 of Practice 1D of Sing 5A

Then present:

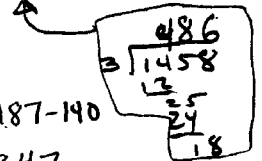
- 5A pg 63 # 31



$$3 \text{ units} = 1458$$

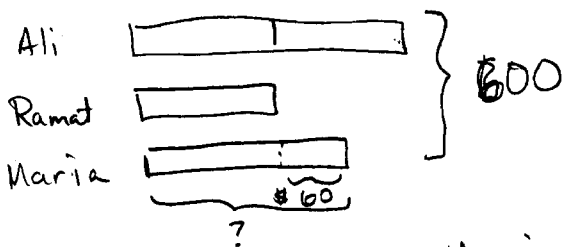
$$1 \text{ unit} = 1458 \div 3 = 486$$

$$486 - 139 = 486 - 140 + 1 = 347$$



The bike cost \$347.

- 5A pg 90 # 16



$$4 \text{ units} + \$60 = \$600$$

$$4 \text{ units} = \$540$$

$$1 \text{ unit} = \$135$$

$$135 + 60 = 195$$

Maria saved \$195.

HW: Do

In groups of 2,
Assign #2, #4, #8 on page 25 of
Sing 5A.

Send to board after 4 min. to present
T.S.

If time, give a quiz.

HW Do Hw set 6 and HW set 8.

↗
[SAY: We did some
of these problems]