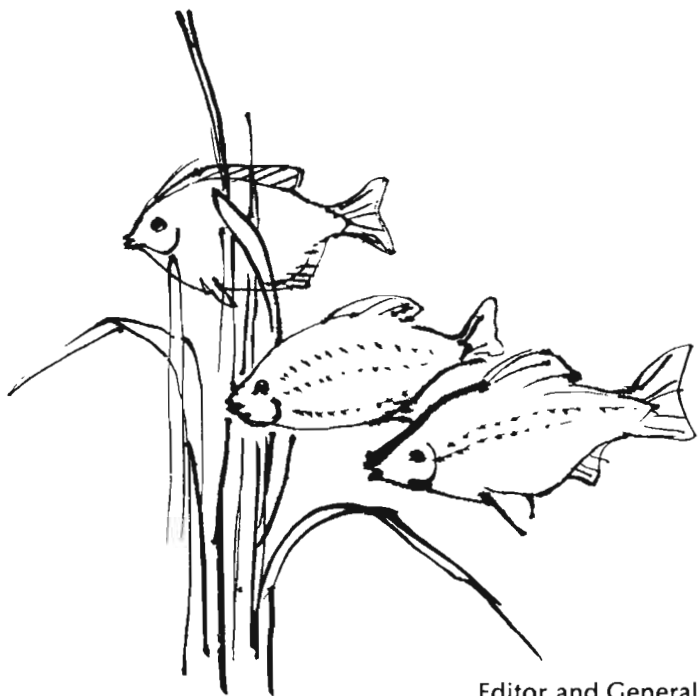


**individualized
computation**



answers & annotations



Cover Art
The Open Primary class of Dorothy Messner and
Paula Crivello at R.H. Down School.

Art Staff
DENIS MURPHY
ROY LIPSCHUTZ

Editor and General Manager
ROBERT BECK

Art and Production Manager
LIESELOTTE ESSER

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BCDE-B-32109

You might want to point out to children that not all answers are given.

10	20	30
9	19	
	18	
7		27
6		26
5		
4		
3		23
2		22
1		21

10
9
8
7
6
5
4
3
2
1

10	20
9	19
8	18
7	17
6	16
5	15
4	14
3	13
2	12
1	11

10	20	30
9	19	29
8	18	28
7	17	27
6	16	26
5	15	25
4	14	24
3	13	23
2	12	22
1	11	21

Many teachers have found peer instruction a tremendous asset in the Individualized Computation program. A student who has just mastered an activity is an excellent teacher for a classmate just encountering that activity. They both benefit from peer teaching while you are freed to check on the quality of the learning. More discussion of peer teaching in Math for Everyone.

A. 10

B. 13

C.

D.

See also:

Developing Insights (D.I.)
p. 49-55

Patterns and Problems A (A/PP)
p. 33-34
45-46
52,55

A. 10

B. 13

C. 11

D. 15

20	30	40
19		39
18		
17		
16		
15		35
		34
13		33
12		
11		31

10
9
8
7
6
5
4
3
2
1

10	20
9	19
8	18
7	17
6	16
5	15
4	14
3	13
2	12
1	11

10	20	30	40
9	19	29	39
8	18	28	38
7	17	27	37
6	16	26	36
5	15	25	35
4	14	24	34
3	13	23	33
2	12	22	32
1	11	21	31

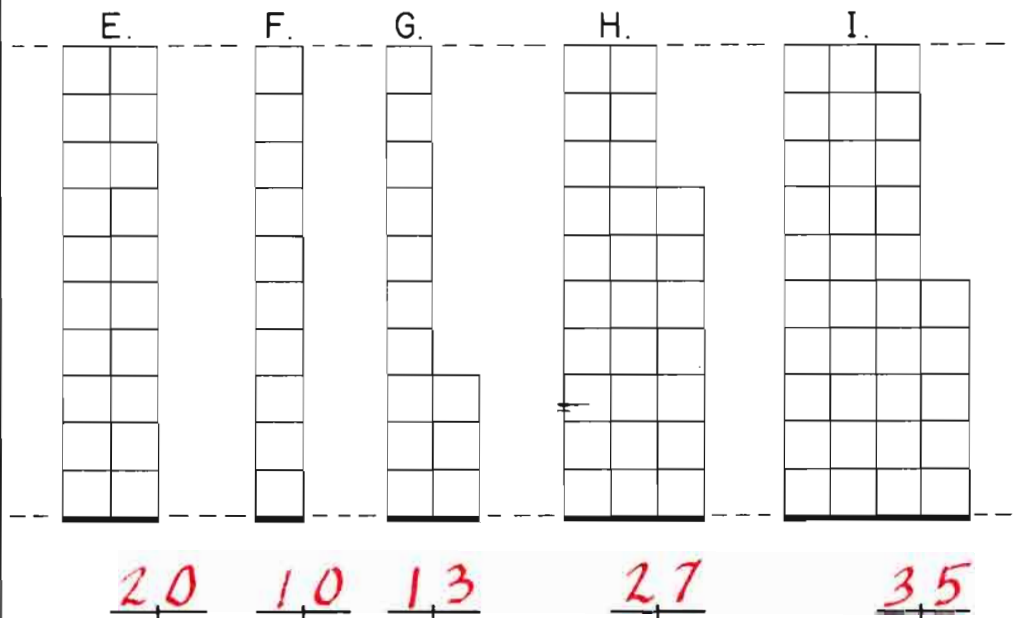
E. 20

F.

G. 13

H.

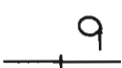
I. 35

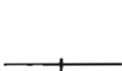


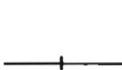
30	40	50
29		49
26		46
	35	
24		44
	33	
22		42
	31	

10	20
9	19
8	18
7	17
6	16
5	15
4	14
3	13
2	12
1	11

10	20	30	40	50
9	19	29	39	49
8	18	28	38	48
7	17	27	37	47
6	16	26	36	46
5	15	25	35	45
4	14	24	34	44
3	13	23	33	43
2	12	22	32	42
1	11	21	31	41

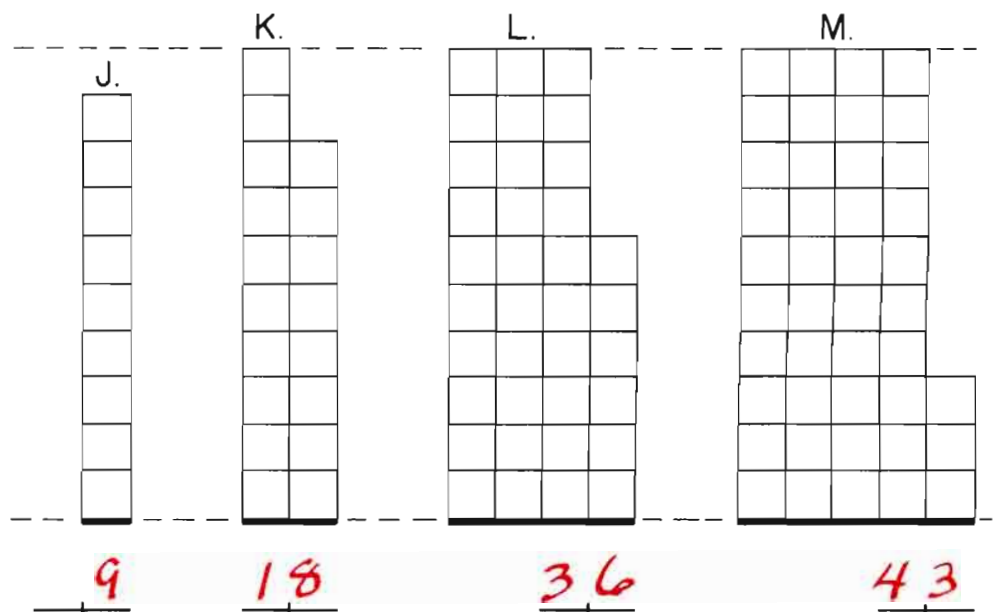
J. 

K. 

L. 

M. ~~53~~ 43

WRONG ANSWER

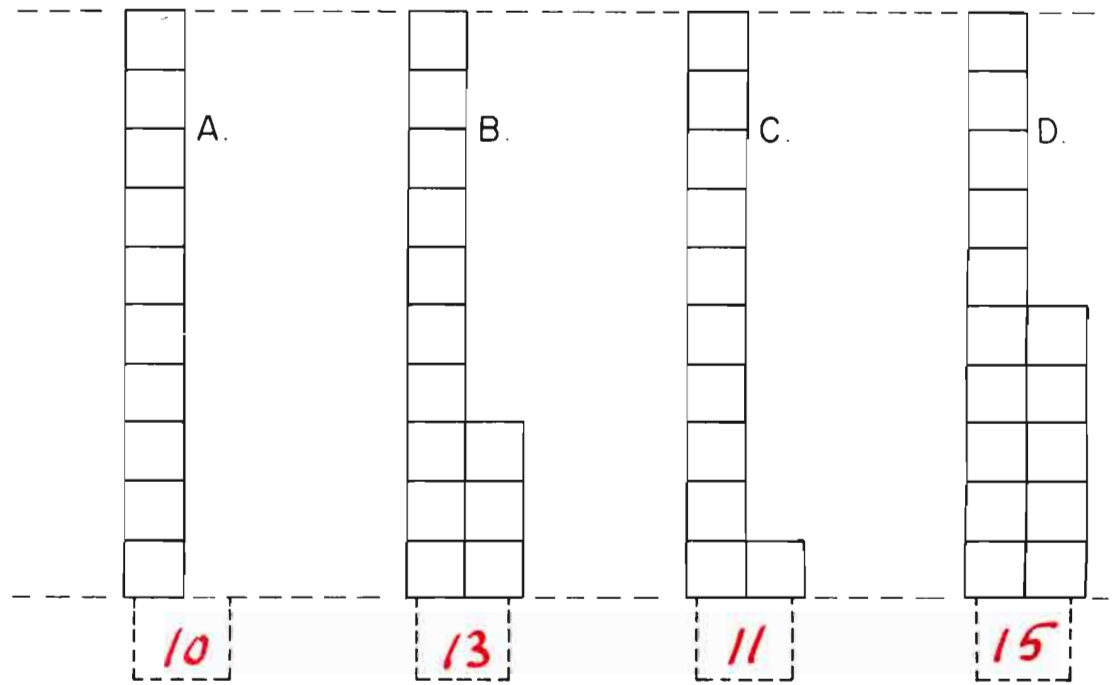


A. [10]

B. [13]

C. []

D. [15]

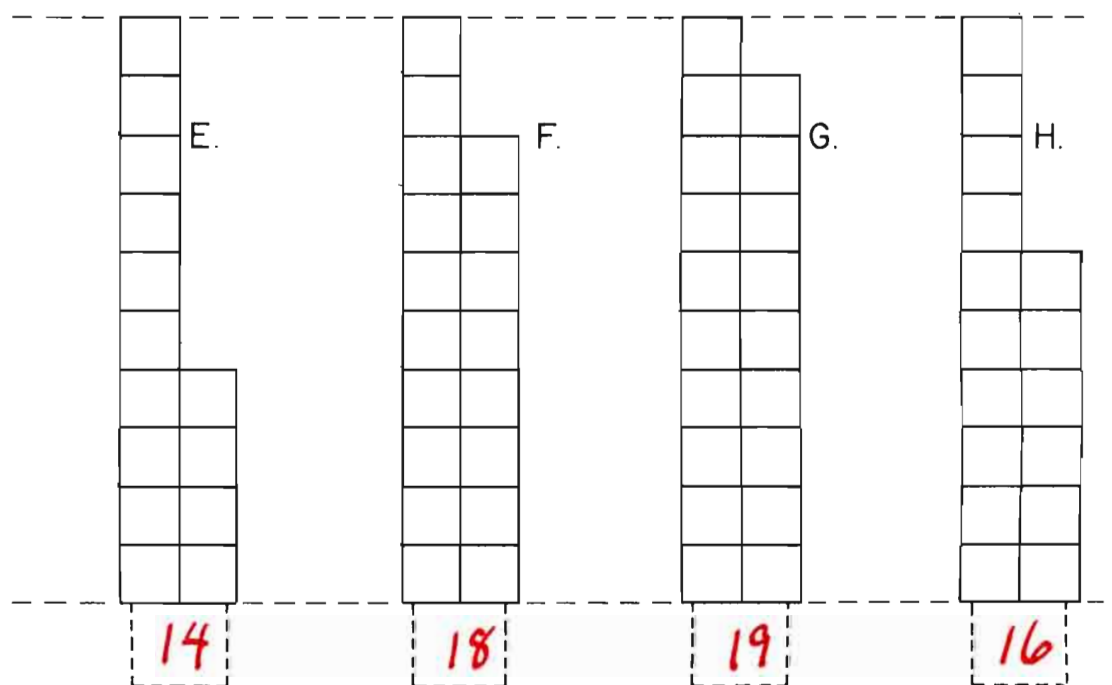


E. []

F. [18]

G. []

H. []



The child may notice that there are 10 beads between the dotted lines, or may need to count each bead. If the child is counting each bead, you might point out the shortcut of counting on from 10.

10		10
11		11
9		9
13		13
10		10
12		12
14		14
13		13
12		12
15		15
14		14
13		13
16		16

A.

12

B.

10

C.

D.

E.

16

F.

G.

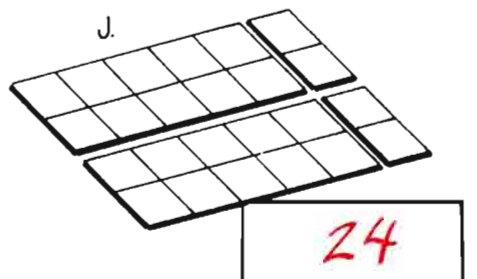
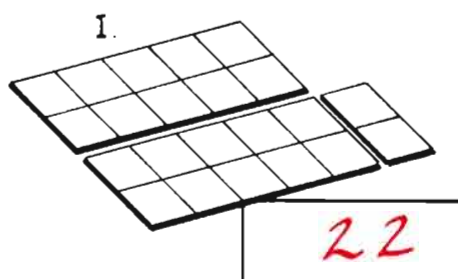
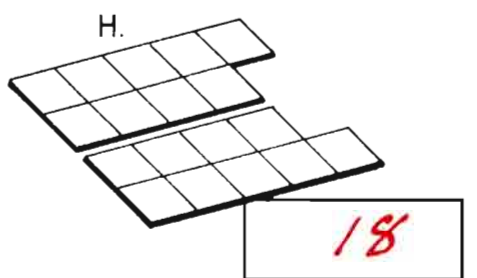
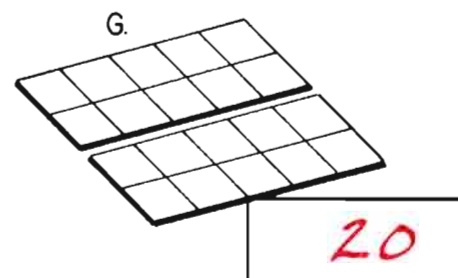
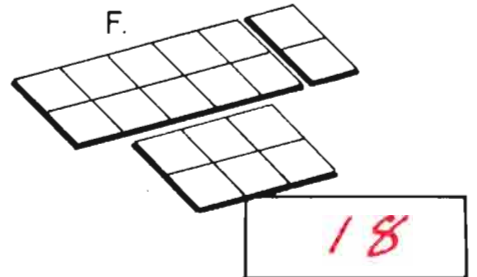
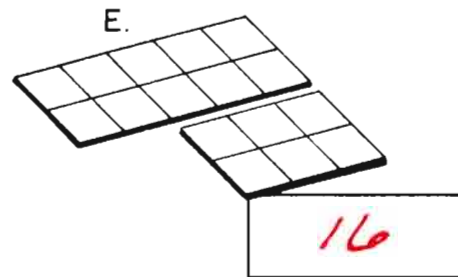
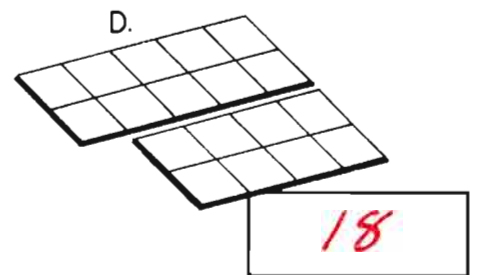
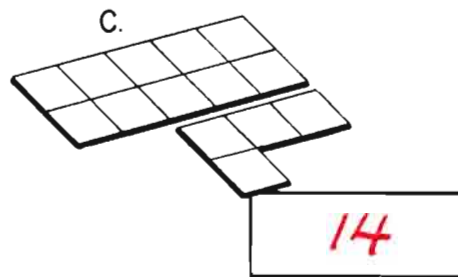
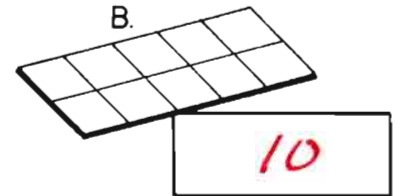
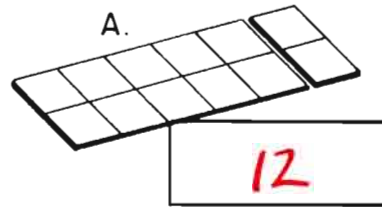
H.

18

I.

22

J.



Note: if the child notices that each tied stack is 10 books, you might encourage "counting on" from 10 again.

a.

b.

22

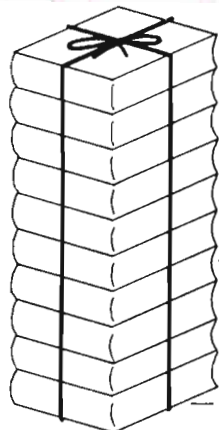
c.

d.

13

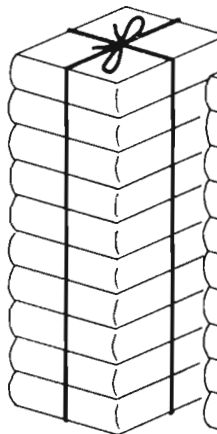
e.

f.



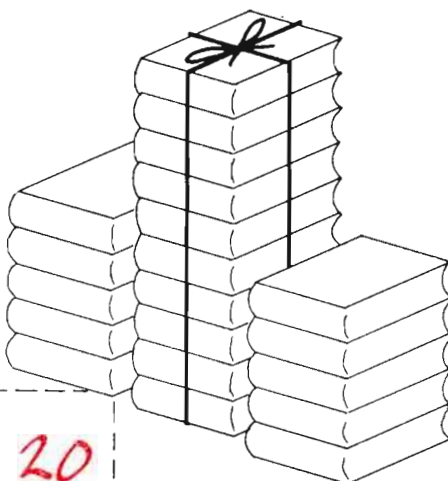
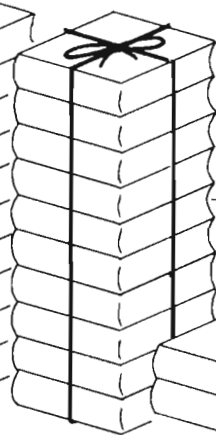
a.

10



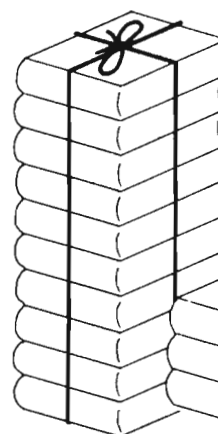
b.

22



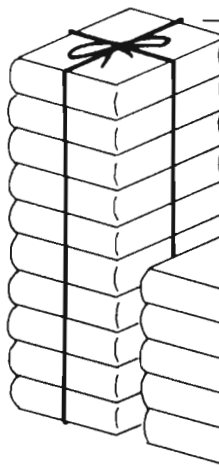
c.

20



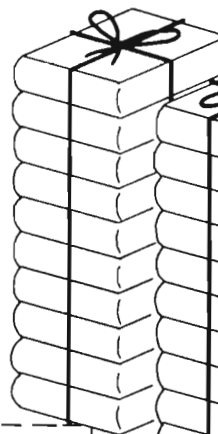
d.

13



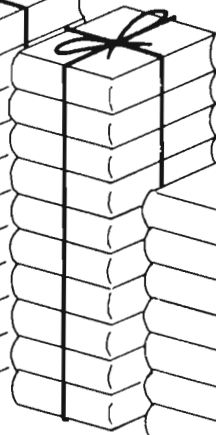
e.

15

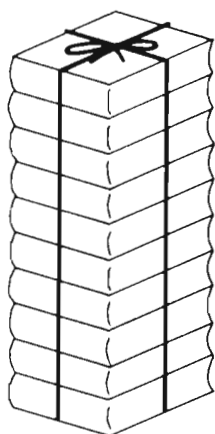


f.

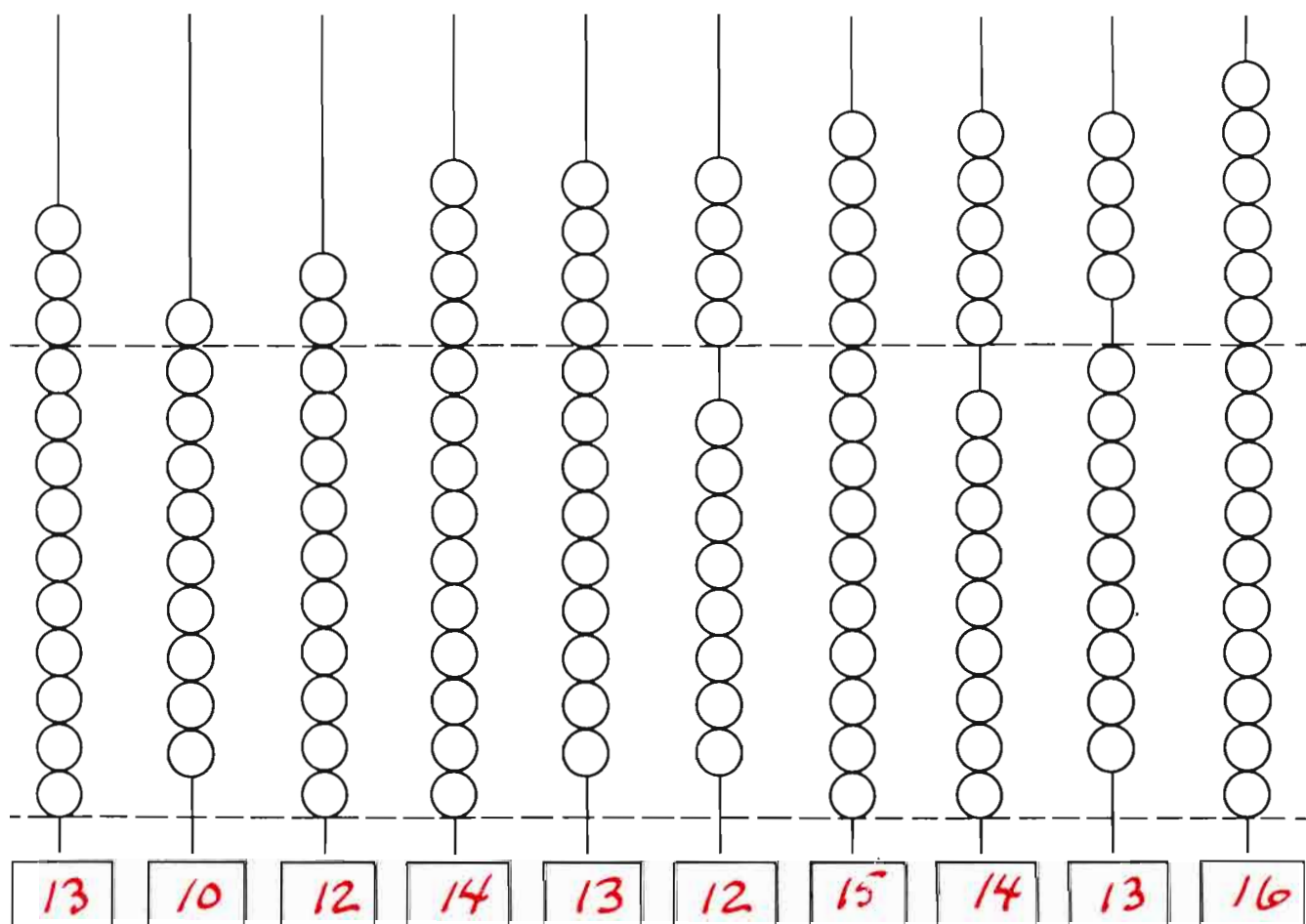
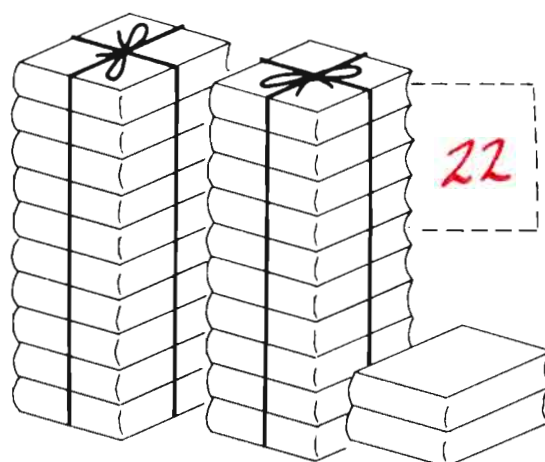
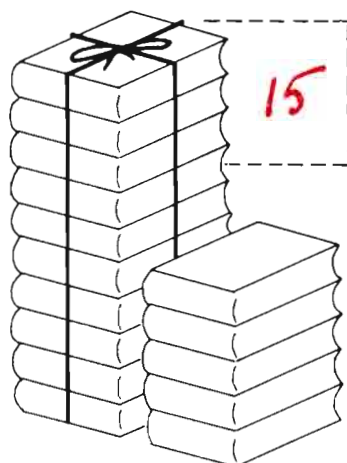
27



How do you feel?
¿Cómo se siente?



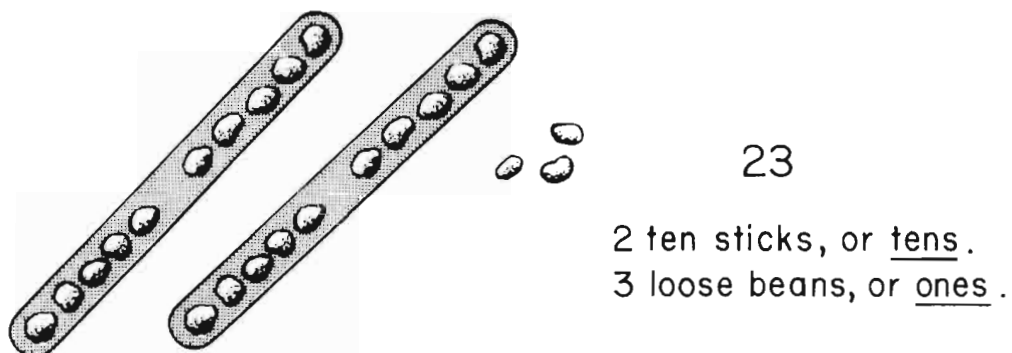
10



Dear Parents,

The check-up exercise on the back of this page shows progress in that increasingly familiar task of “counting on”. We still can’t be sure, unless we actually watch the child carefully during the test, if counting on is really happening, or if each book or bead is being counted. You can subtly check on this by casually asking your child how the sum was arrived at by showing the reverse side of this page and asking that you be shown how to do it. (Children take great delight in showing adults how to do things, as long as they don’t think it’s a trap--so be careful!)

• If you made the “bean-sticks” suggested earlier, you can help your child practice “counting on” by using “ten-sticks” and loose beans, and asking the sum. For example:



Don’t be surprised in the next few days when you find your child bringing home multiplication problems. Instead of delaying this operation until much later, as in most math programs, we teach it now as a short-cut to addition. It is best done with beans, buttons, or counters at this stage. To assure continuing success, feel free to express your DELIGHT & AMAZEMENT when the first papers come home!

Sincerely,

Another prime opportunity to use peer instruction. One or two students well introduced to this activity can begin the instructional chain reaction with you merely administering quality control.

Students will need counters.

$$\boxed{} \times \boxed{2} = \boxed{}$$

You may want to introduce this page as a series of deliberate steps (i.e. 1 - child may choose number of counters, 2 - put that number in the first small box, 3 - same number of counters goes in each checked box, 4 - count

$$\boxed{} \times \boxed{3} = \boxed{}$$

how many all together, 5 - put answer in last small box, 6 - read "your number multiplied by 2 equals your total")

$$\boxed{} \times \boxed{1} = \boxed{}$$

A child who is comfortable with this page can then proceed independently, or with mininum assistance for many pages. See also: Drill and Practice (D&P) p 11-14, 111-114, D.I. p 20-28,

$$\boxed{} \times \boxed{4} = \boxed{}$$

--	--	--	--

$$\square \times \square = \square$$

This time the child checks the frames she wishes to use, then writes the number of frames in the broken line square. Throughout Individualized Computation the child is given this type of page for making up her own examples.

--	--	--	--

$$\square \times \square = \square$$

--	--	--	--

$$\square \times \square = \square$$

--	--	--	--

$$\square \times \square = \square$$

--	--	--	--

$$\square \times \square = \square$$

--	--	--	--

$$\square \times \square = \square$$

--	--	--	--

$$\square \times \square = \square$$

--	--	--	--

$$\square \times \square = \square$$

--	--	--	--

$$\boxed{4} \times \boxed{2} = \boxed{8}$$

--	--	--	--

$$\boxed{0} \times \boxed{3} = \boxed{0}$$

--	--	--	--

$$\boxed{3} \times \boxed{3} = \boxed{9}$$

--	--	--	--

$$\boxed{3} \times \boxed{4} = \boxed{12}$$

A. $\boxed{2}$

B. $\boxed{4}$

C. $\boxed{}$

D. $\boxed{\times}$ ³

E. $\boxed{0}$

F. $\boxed{}$

--	--

A. $\boxed{1} \times \boxed{2} = \boxed{2}$

B. $\boxed{2} \times \boxed{2} = \boxed{4}$

C. $\boxed{3} \times \boxed{2} = \boxed{6}$

--	--	--

D. $\boxed{1} \times \boxed{3} = \boxed{3}$

E. $\boxed{0} \times \boxed{3} = \boxed{0}$

F. $\boxed{2} \times \boxed{3} = \boxed{6}$

G. $\boxed{8}$

H. $\boxed{}$

I. $\boxed{12}$

J. $\boxed{5}$

K. $\boxed{}$

L. $\boxed{}$

--	--	--	--

G. $\boxed{2} \times \boxed{4} = \boxed{8}$

H. $\boxed{1} \times \boxed{4} = \boxed{4}$

I. $\boxed{3} \times \boxed{4} = \boxed{12}$

--	--	--	--

J. $\boxed{1} \times \boxed{5} = \boxed{5}$

K. $\boxed{2} \times \boxed{5} = \boxed{10}$

L. $\boxed{3} \times \boxed{5} = \boxed{15}$

M. $\boxed{0}$

N. $\boxed{4}$

O. $\boxed{}$

P. $\boxed{6}$

Q. $\boxed{}$

R. $\boxed{}$

--	--	--	--

M. $\boxed{0} \times \boxed{2} = \boxed{0}$

N. $\boxed{4} \times \boxed{1} = \boxed{4}$

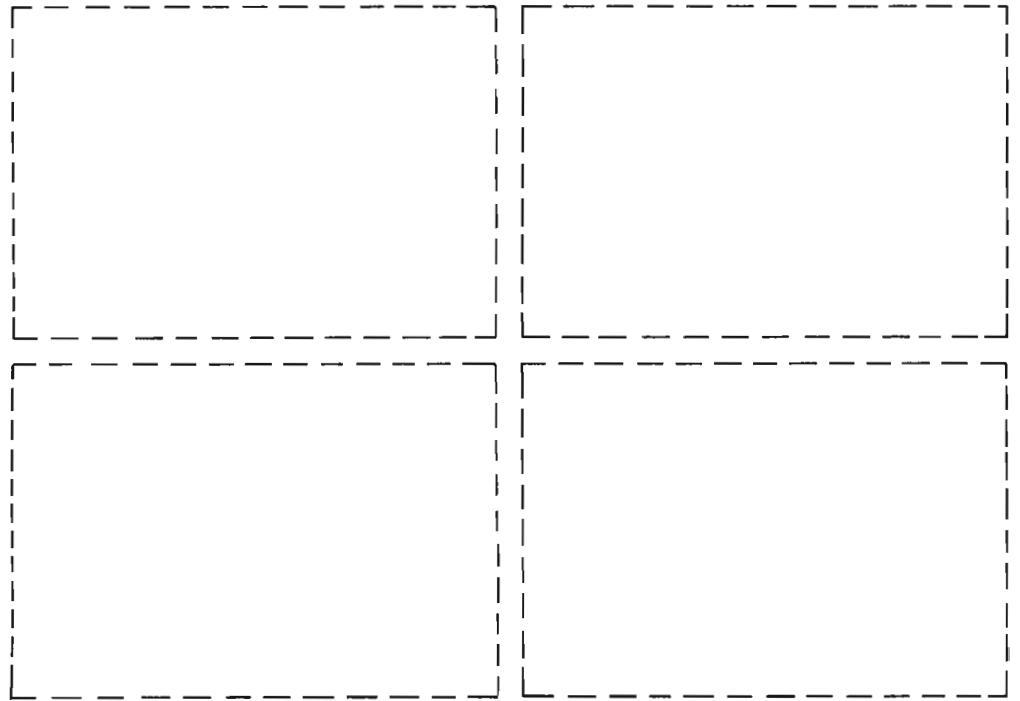
O. $\boxed{3} \times \boxed{3} = \boxed{9}$

--	--	--	--

P. $\boxed{6} \times \boxed{1} = \boxed{6}$

Q. $\boxed{2} \times \boxed{4} = \boxed{8}$

R. $\boxed{5} \times \boxed{2} = \boxed{10}$



s. $\boxed{6}$

t. $\boxed{}$

u. $\boxed{}$

v. $\boxed{16}$

w. $\boxed{}$

x. $\boxed{12}$

s. $\boxed{3} \times \boxed{2} = \boxed{6}$

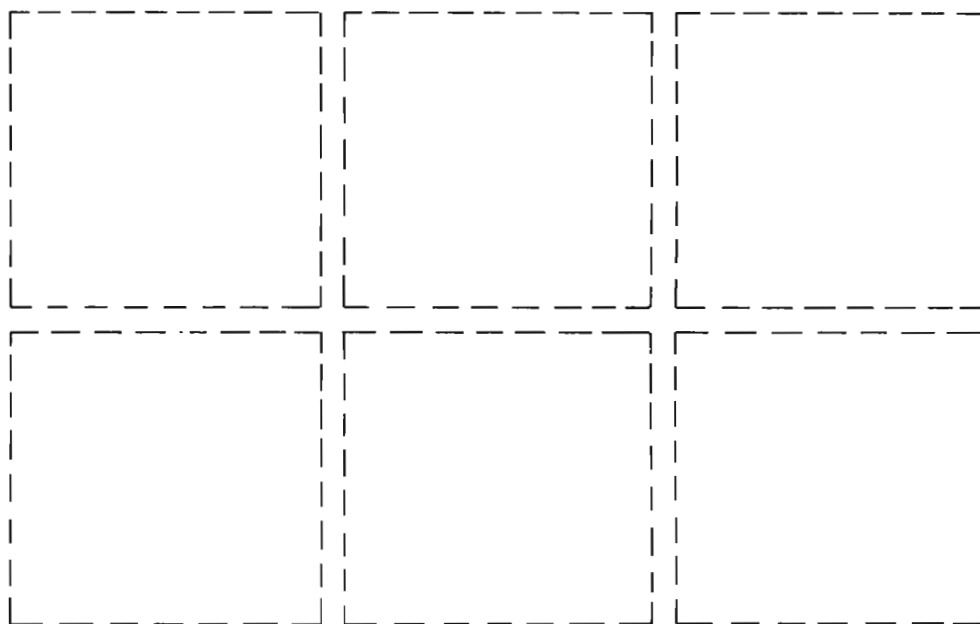
t. $\boxed{4} \times \boxed{0} = \boxed{0}$

u. $\boxed{5} \times \boxed{1} = \boxed{5}$

v. $\boxed{4} \times \boxed{4} = \boxed{16}$

w. $\boxed{6} \times \boxed{2} = \boxed{12}$

x. $\boxed{4} \times \boxed{3} = \boxed{12}$



a. $\boxed{6}$

b. $\boxed{12}$

c. $\boxed{0}$

d. $\boxed{}$

e. $\boxed{36}$

f. $\boxed{}$

a. $\boxed{1} \times \boxed{6} = \boxed{6}$

b. $\boxed{2} \times \boxed{6} = \boxed{12}$

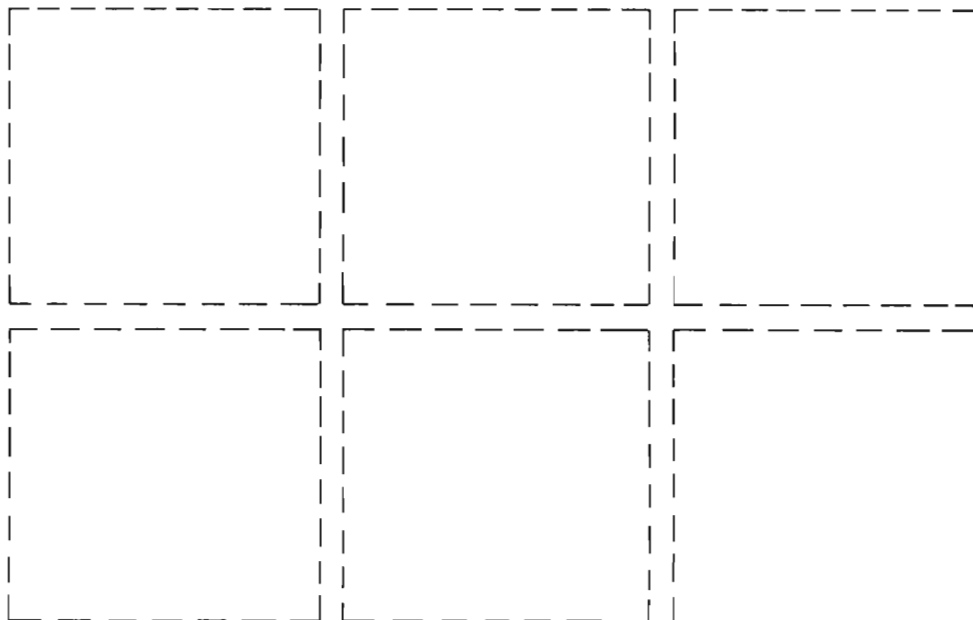
c. $\boxed{0} \times \boxed{6} = \boxed{0}$

d. $\boxed{3} \times \boxed{6} = \boxed{18}$

e. $\boxed{6} \times \boxed{6} = \boxed{36}$

f. $\boxed{5} \times \boxed{6} = \boxed{30}$

Six squares are used each time.



g. $\boxed{5}$

h. $\boxed{}$

i. $\boxed{15}$

j. $\boxed{}$

k. $\boxed{}$

l. $\boxed{30}$

g. $\boxed{5} \times \boxed{1} = \boxed{5}$

h. $\boxed{5} \times \boxed{2} = \boxed{10}$

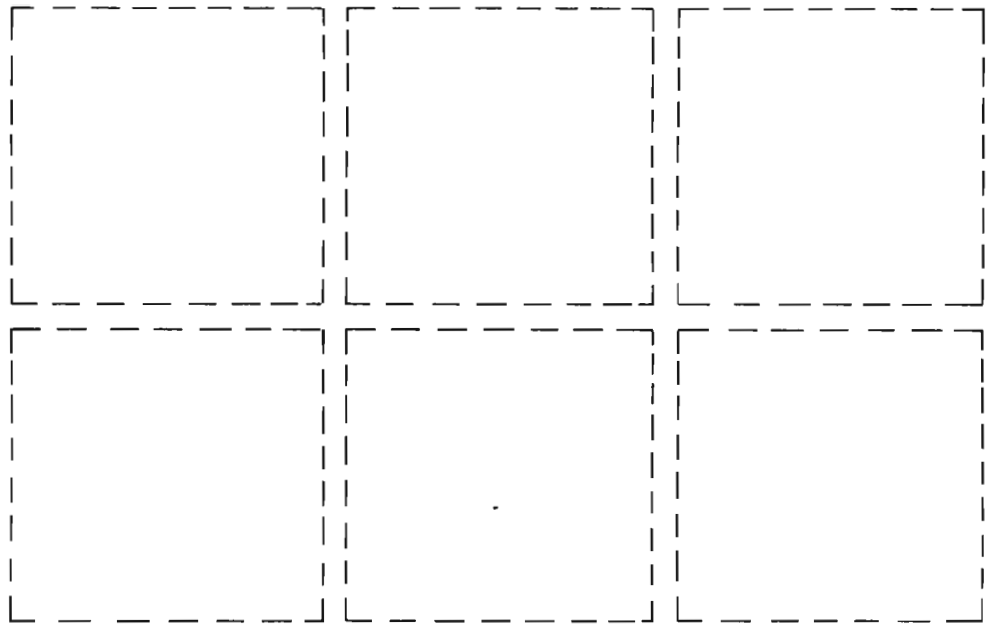
i. $\boxed{5} \times \boxed{3} = \boxed{15}$

j. $\boxed{5} \times \boxed{4} = \boxed{20}$

k. $\boxed{5} \times \boxed{5} = \boxed{25}$

l. $\boxed{5} \times \boxed{6} = \boxed{30}$

The child puts the same number of counters in each square, but uses a different number of squares each time.



m. $\boxed{1}$

m. $\boxed{1} \times \boxed{1} = \boxed{1}$

n. $\boxed{}$

n. $\boxed{2} \times \boxed{2} = \boxed{4}$

o. $\boxed{9}$

o. $\boxed{3} \times \boxed{3} = \boxed{9}$

p. $\underline{}$

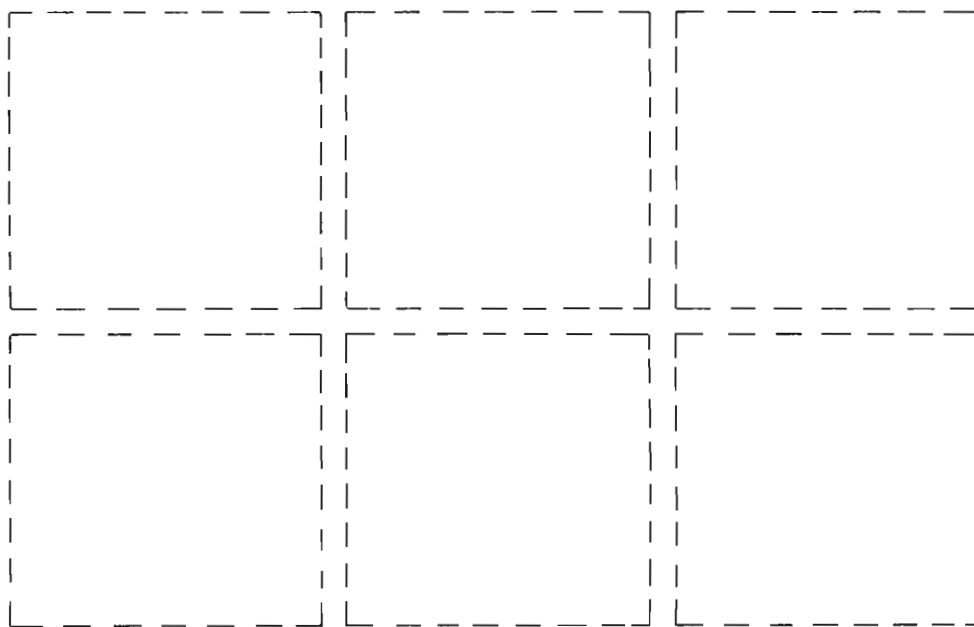
p. $\underline{4} \times \underline{4} = \underline{16}$

q. $\underline{25}$

q. $\underline{5} \times \underline{5} = \underline{25}$

r. $\underline{}$

r. $\underline{6} \times \underline{6} = \underline{36}$



s. $\boxed{0}$

s. $\boxed{6} \times \boxed{0} = \boxed{0}$

t. $\boxed{}$

t. $\boxed{6} \times \boxed{1} = \boxed{6}$

u. $\underline{12}$

u. $\underline{6 \times 2 = 12}$

v. $\underline{}$

v. $\underline{6 \times 3 = 18}$

w. $\underline{24}$

w. $\underline{6 \times 4 = 24}$

x. $\underline{}$

x. $\underline{6 \times 5 = 30}$

$$2 \times 4 = 8$$

$$3 \times 2 = 6$$

$$4 \times 3 = 12$$

$$4 \times 5 = 20$$

$$6 \times 4 = 24$$

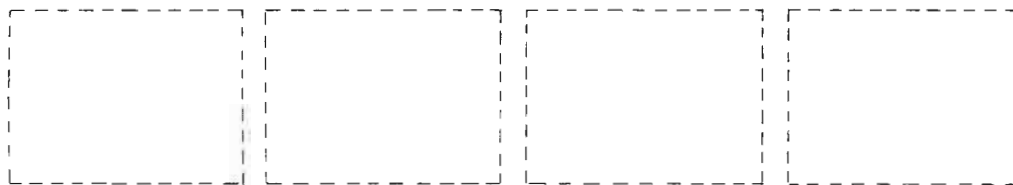
$$5 \times 6 = 30$$

How do you feel?
¿Cómo se siente?



Dear Parents,

Now you can see that your child understands the fundamental process of multiplication, a shortcut to addition. For a long time it will be necessary to rely on counters of some sort. Maybe you can get out some dried beans or buttons and ask your little one to show you how to do it:


$$\boxed{3} \times \boxed{4} = \boxed{} \quad (\text{Use 12 Counters})$$

Actually, children have a sense of what multiplication is long before they know how to write it down. Again, resist the temptation to take the shortcut of teaching the "times tables" by rote memory. This is meaningless at this stage, and may never be necessary if enough experience is developed by the continuous use of things to group and count.

Coming next is the preliminary step to a long training process in regrouping tens in addition--what we used to call "carrying." Again we beg of you, resist the temptation to teach your child the "fast" way like we were taught. It bypasses understanding and usually creates insecurity. So far your young one is having high success. Let's work together to keep it that way!

Sincerely,

The number of boxes shown in each picture goes in the spaces indicated by the arrows. The total goes below. Here again counting on from 10 can be mentioned.

A.

$$\begin{array}{r} \rightarrow 10 \\ + 20 \leftarrow - \\ \hline 30 \end{array}$$

B.

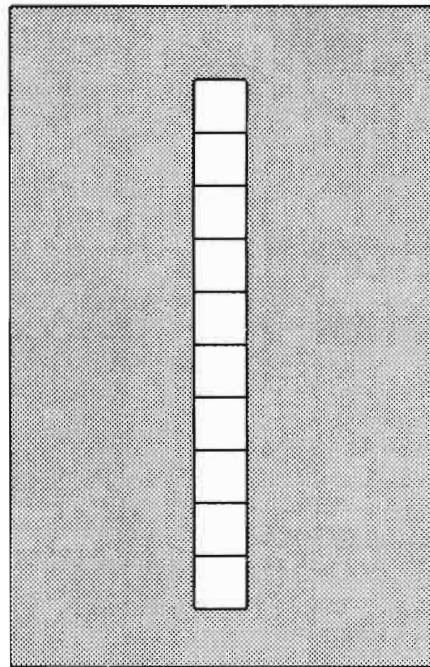
$$\begin{array}{r} 10 \leftarrow - \\ + 19 \leftarrow - \\ \hline \end{array}$$

C.

$$\begin{array}{r} 20 \leftarrow - \\ + 12 \leftarrow - \\ \hline \end{array}$$

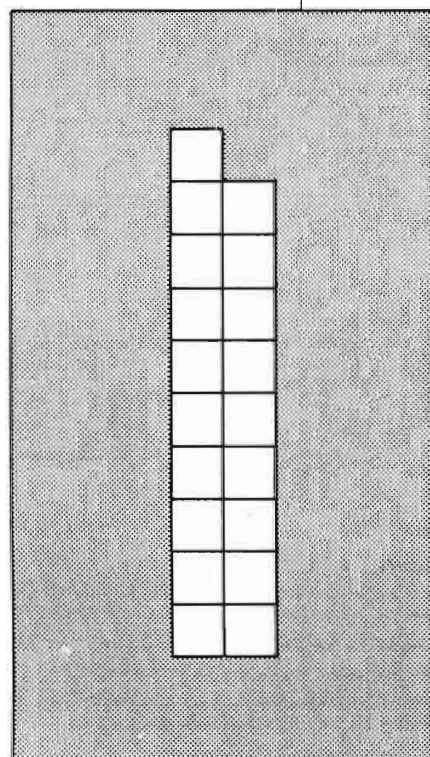
D.

$$\begin{array}{r} \rightarrow \\ + 12 \leftarrow - \\ \hline \end{array}$$



B.

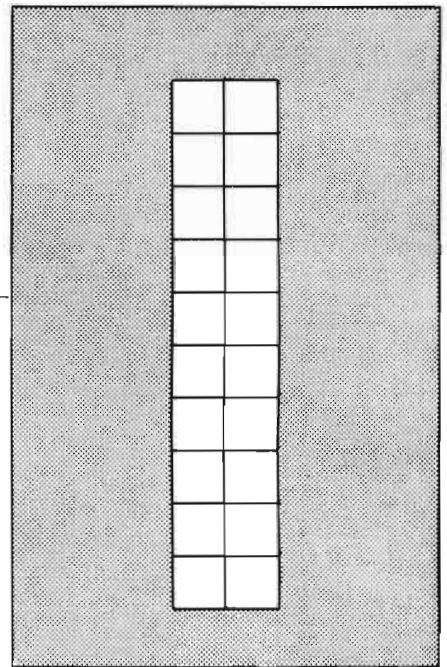
$$\begin{array}{r} 10 \leftarrow - \\ + 19 \leftarrow - \\ \hline 29 \end{array}$$



See also:
D.I. p.
62 - 67

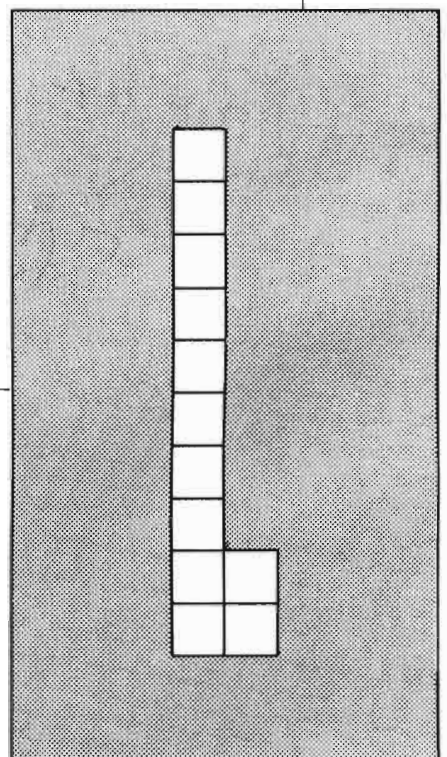
A.

$$\begin{array}{r} \rightarrow 10 \\ + 20 \leftarrow - \\ \hline 30 \end{array}$$



C.

$$\begin{array}{r} 20 \leftarrow - \\ + 12 \leftarrow - \\ \hline 32 \end{array}$$



D.

$$\begin{array}{r} \rightarrow 19 \\ + 12 \leftarrow - \\ \hline 31 \end{array}$$

E.

$$\begin{array}{r} \rightarrow 7 \\ + 12 \leftarrow - \\ \hline \cancel{15} \quad 19 \end{array}$$

F.

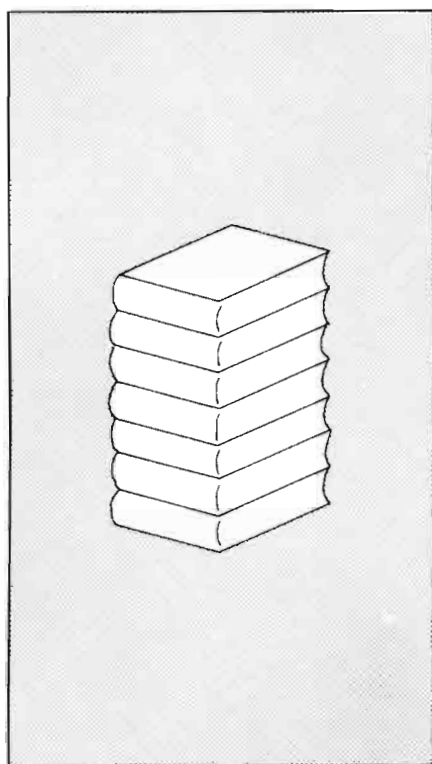
$$\begin{array}{r} 7 \leftarrow \downarrow \\ + 15 \leftarrow \downarrow \\ \hline \square \end{array}$$

G.

$$\begin{array}{r} \square \leftarrow \downarrow \\ + \square \leftarrow \downarrow \\ \hline 29 \end{array}$$

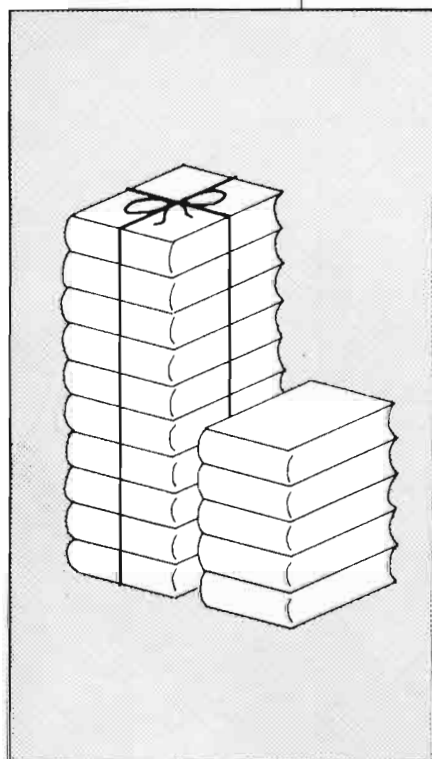
H.

$$\begin{array}{r} \rightarrow 15 \\ + \square \leftarrow - \\ \hline \square \end{array}$$



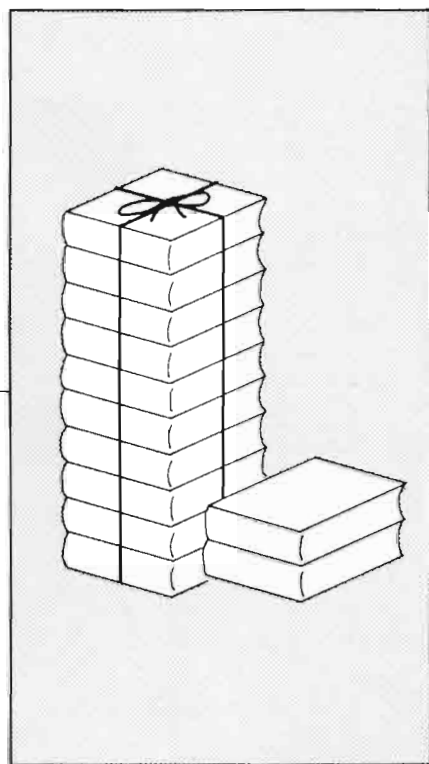
F.

$$\begin{array}{r} 7 \leftarrow \downarrow \\ + 15 \leftarrow \downarrow \\ \hline 22 \end{array}$$



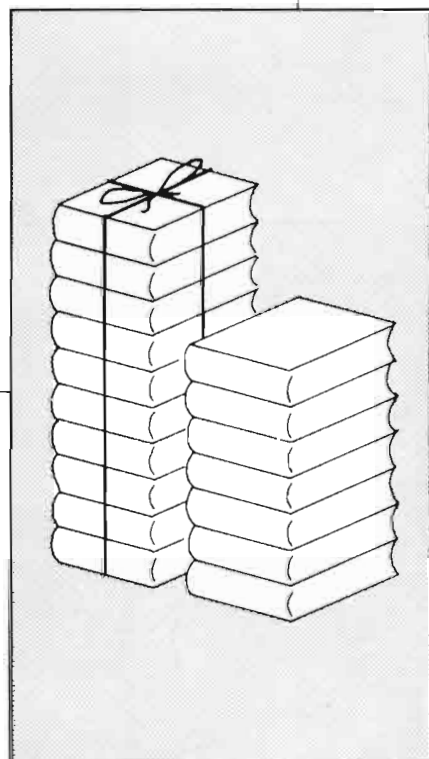
E.

$$\begin{array}{r} \rightarrow 7 \\ + 12 \leftarrow - \\ \hline 19 \end{array}$$



G.

$$\begin{array}{r} 12 \leftarrow \downarrow \\ + 17 \leftarrow \downarrow \\ \hline 29 \end{array}$$



H.

$$\begin{array}{r} \rightarrow 15 \\ + 17 \leftarrow - \\ \hline 32 \end{array}$$

I.

->	23	
+	23	<--
	46	

J.

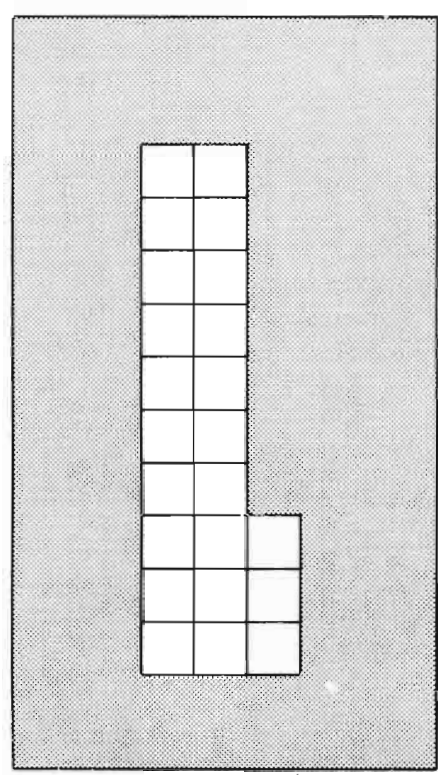
	23	<--
+	17	<--

K.

		<--
+		<--
	39	

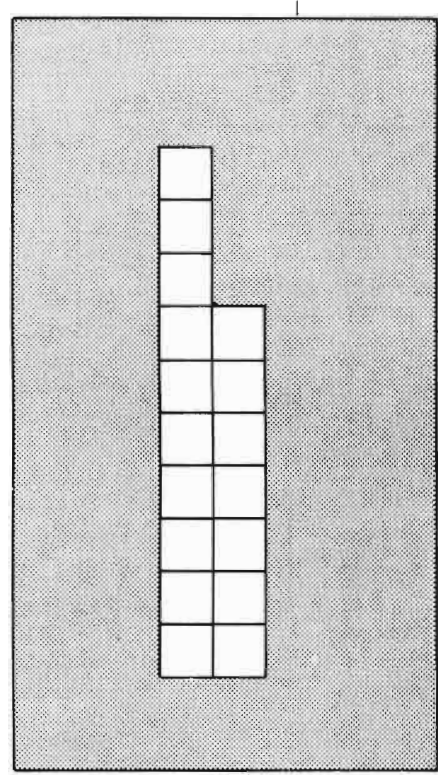
L.

->	17	
+	16	<--



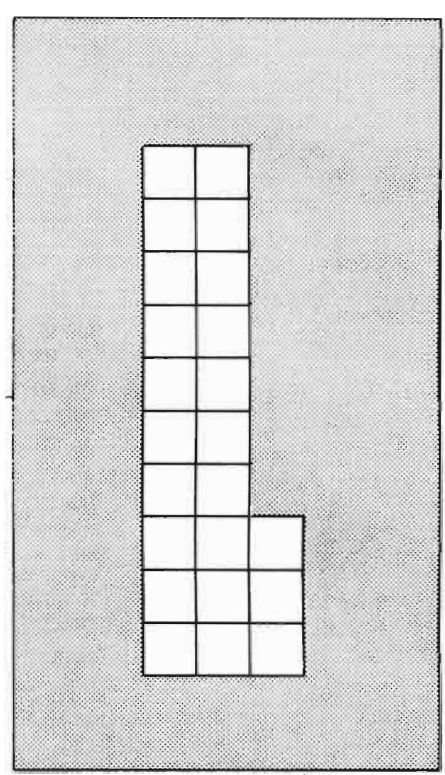
J.

	23	<--
+	17	<--
	40	



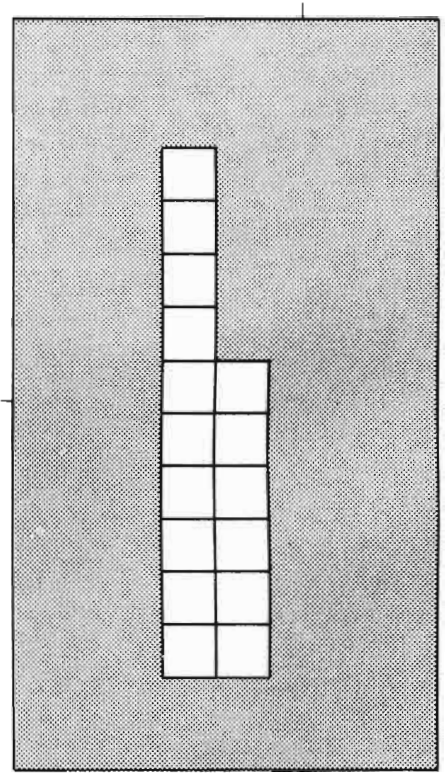
I.

->	23	
+	23	<--
	46	



K.

	23	<--
+	16	<--
	39	



L.

->	17	
+	16	<--
	33	

M.

$$\begin{array}{r} \rightarrow 15 \\ + 18 \leftarrow - \\ \hline \end{array}$$

N.

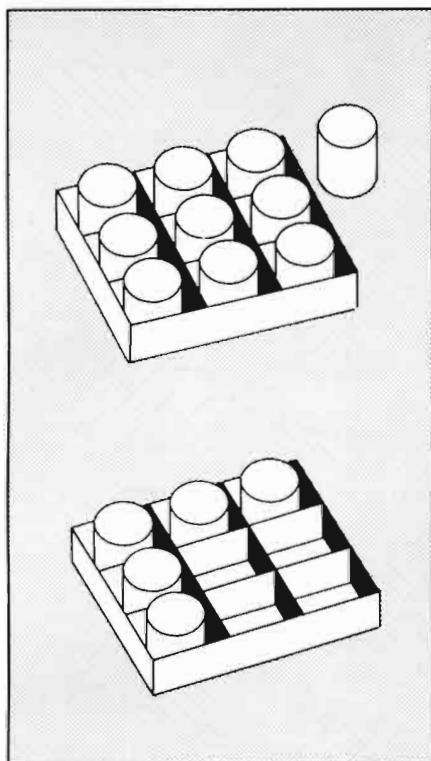
$$\begin{array}{r} \leftarrow - \\ + 6 \leftarrow - \\ \hline 21 \end{array}$$

O.

$$\begin{array}{r} \leftarrow - \\ + 28 \leftarrow - \\ \hline 46 \end{array}$$

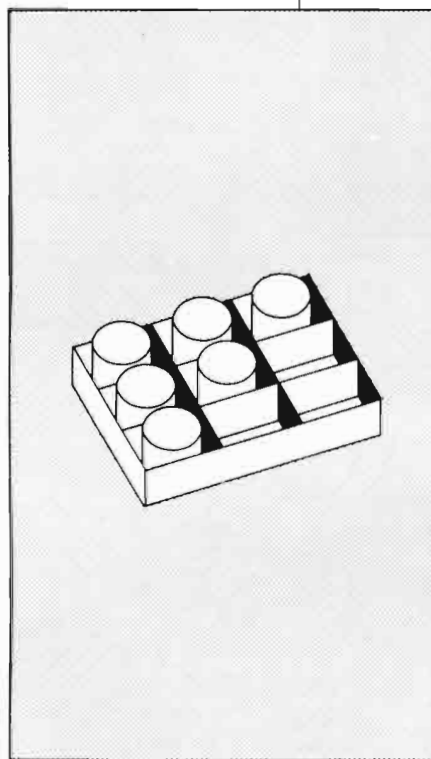
P.

$$\begin{array}{r} \rightarrow 6 \\ + \leftarrow - \\ \hline \end{array}$$



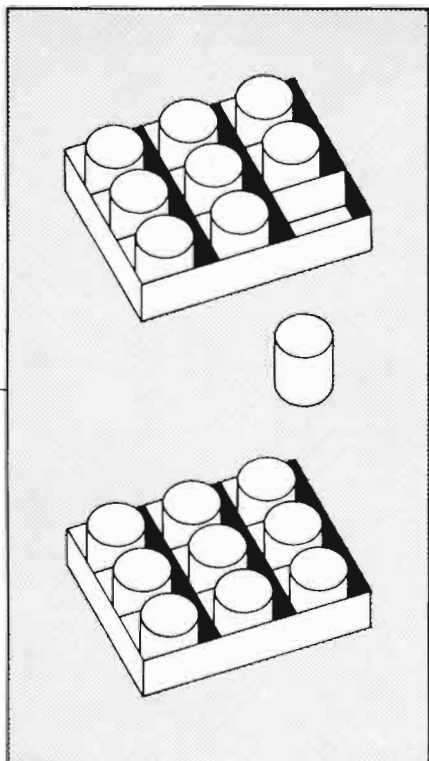
N.

$$\begin{array}{r} 15 \leftarrow - \\ + 6 \leftarrow - \\ \hline 21 \end{array}$$



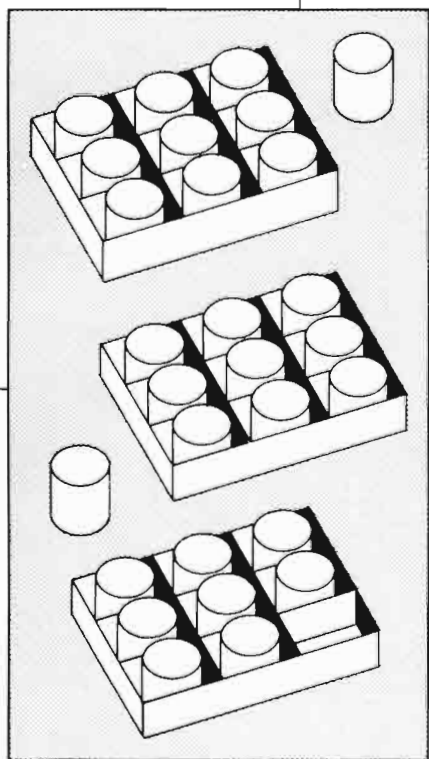
M.

$$\begin{array}{r} \rightarrow 15 \\ + 18 \leftarrow - \\ \hline 33 \end{array}$$



O.

$$\begin{array}{r} 18 \leftarrow - \\ + 28 \leftarrow - \\ \hline 46 \end{array}$$



P.

$$\begin{array}{r} \rightarrow 6 \\ + 28 \leftarrow - \\ \hline 34 \end{array}$$

a.

$$\begin{array}{r} \rightarrow 24 \\ + \quad 9 \leftarrow - \\ \hline 33 \end{array}$$

b.

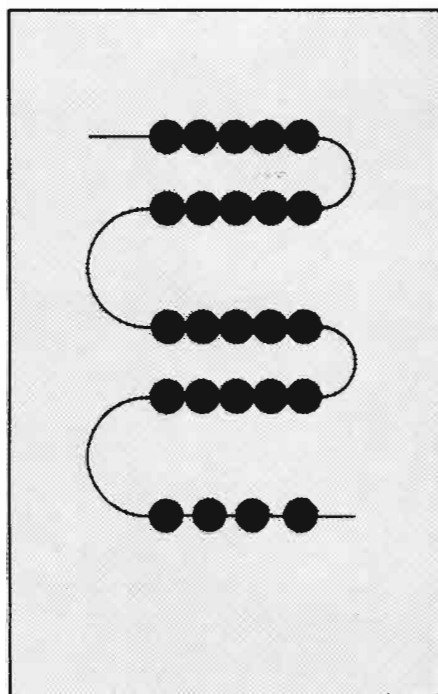
$$\begin{array}{r} \quad \quad \leftarrow - \\ + \quad \quad \leftarrow - \\ \hline 41 \end{array}$$

c.

$$\begin{array}{r} \quad \quad \leftarrow - \\ + 31 \leftarrow - \\ \hline \quad \end{array}$$

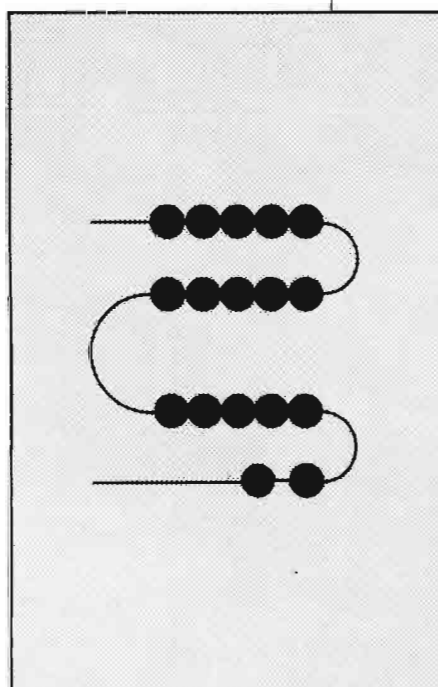
d.

$$\begin{array}{r} \rightarrow 17 \\ + 31 \leftarrow - \\ \hline \quad \end{array}$$



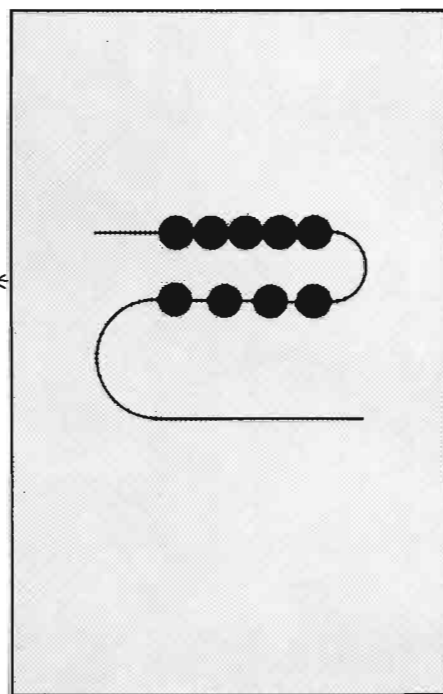
b.

$$\begin{array}{r} 24 \leftarrow - \\ + 17 \leftarrow - \\ \hline 41 \end{array}$$



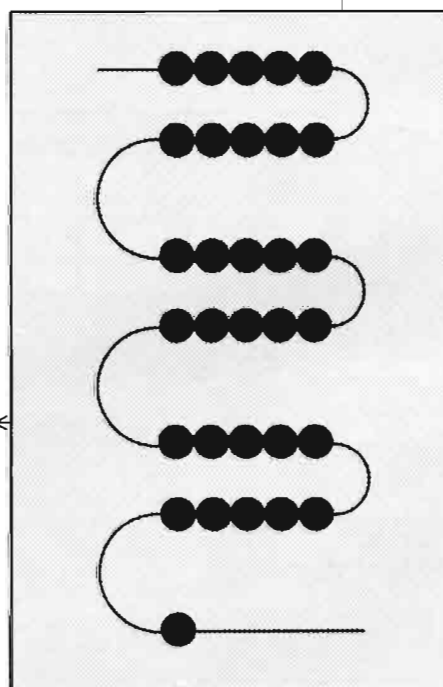
a.

$$\begin{array}{r} \rightarrow 24 \\ + \quad 9 \leftarrow - \\ \hline 33 \end{array}$$



c.

$$\begin{array}{r} 9 \leftarrow - \\ + 31 \leftarrow - \\ \hline 40 \end{array}$$

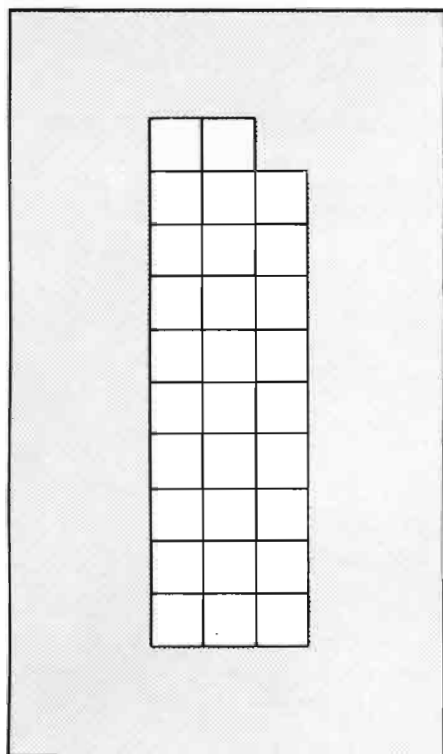


d.

$$\begin{array}{r} \rightarrow 17 \\ + 31 \leftarrow - \\ \hline 48 \end{array}$$

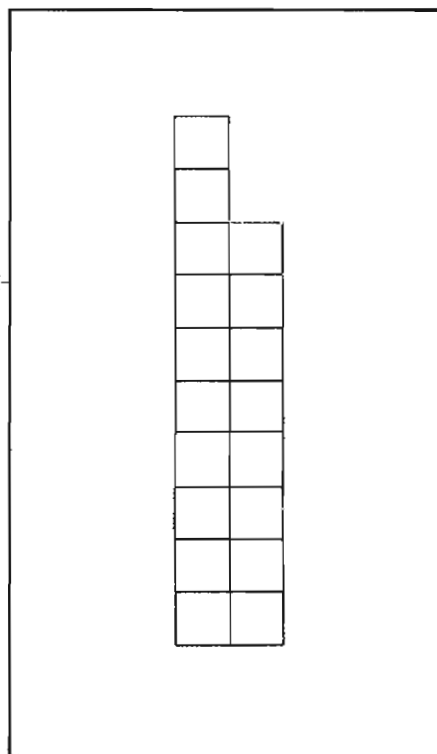
e.

$$\begin{array}{r} \rightarrow 29 \\ + 18 \leftarrow \\ \hline 47 \end{array}$$



e

$$\begin{array}{r} \rightarrow 29 \\ + 18 \leftarrow \\ \hline 47 \end{array}$$

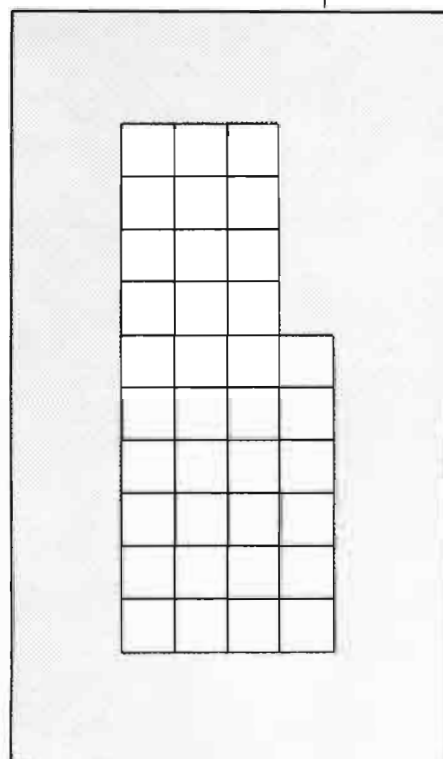


f.

$$\begin{array}{r} \square \\ + \square \\ \hline 65 \end{array}$$

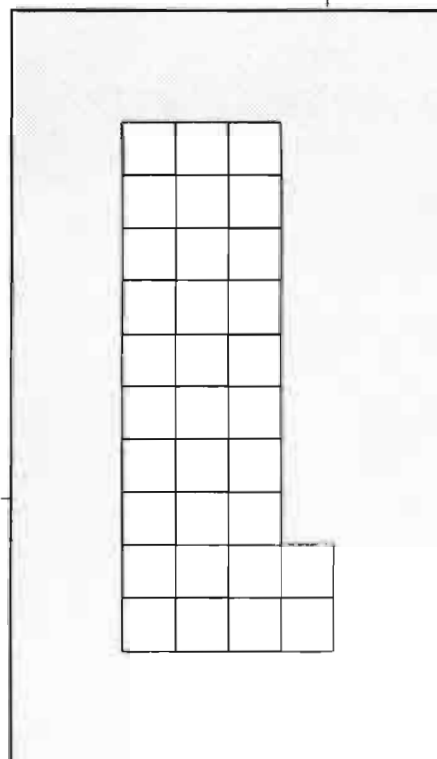
f.

$$\begin{array}{r} 29 \\ + 36 \\ \hline 65 \end{array}$$



h.

$$\begin{array}{r} \rightarrow 36 \\ + 32 \leftarrow \\ \hline 68 \end{array}$$



g.

$$\begin{array}{r} 18 \\ + 32 \\ \hline \square \end{array}$$

g.

$$\begin{array}{r} 18 \\ + 32 \\ \hline 50 \end{array}$$

h.

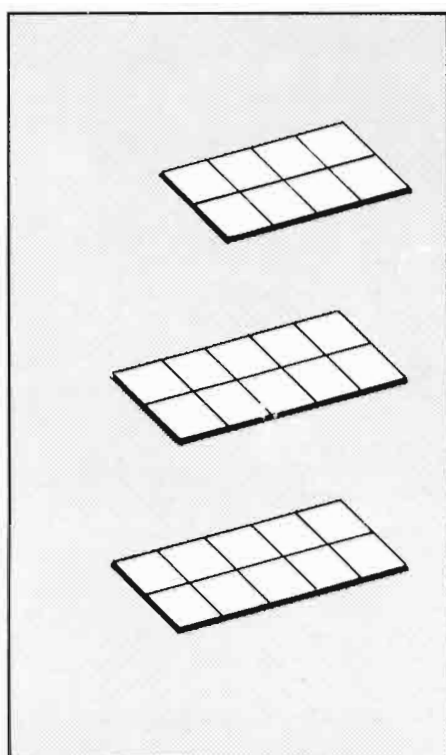
$$\begin{array}{r} \rightarrow 36 \\ + 32 \leftarrow \\ \hline \square \end{array}$$

$$\begin{array}{r} \text{i.} \\ \rightarrow 28 \\ + 20 \leftarrow - \\ \hline 48 \end{array}$$

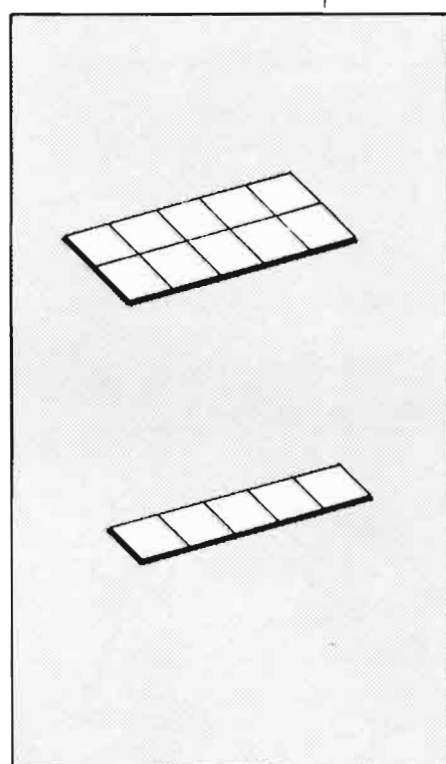
$$\begin{array}{r} \text{j.} \\ 28 \leftarrow - \\ + 15 \leftarrow - \\ \hline \end{array}$$

$$\begin{array}{r} \text{k.} \\ \leftarrow - \\ + \leftarrow - \\ \hline 55 \end{array}$$

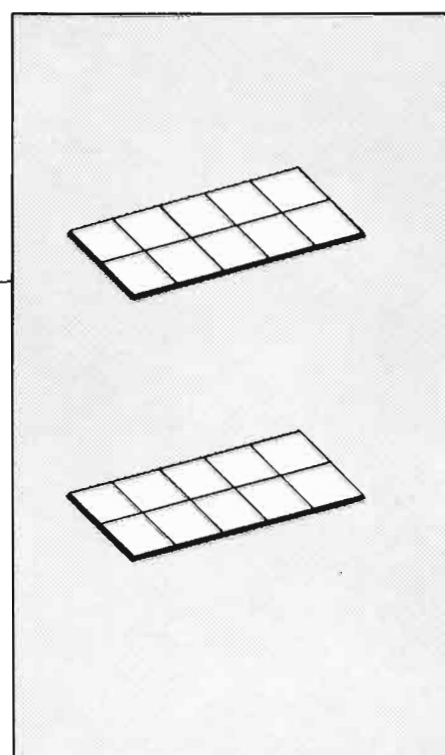
$$\begin{array}{r} \text{l.} \\ \rightarrow 15 \\ + 35 \leftarrow - \\ \hline \end{array}$$



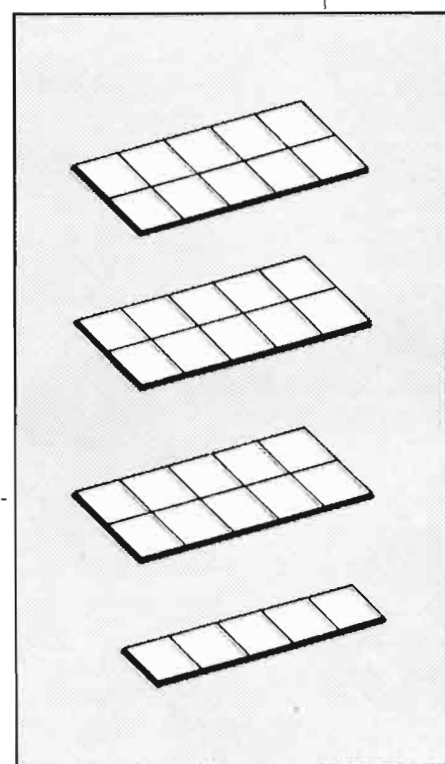
$$\begin{array}{r} \text{j.} \\ 28 \leftarrow - \\ + 15 \leftarrow - \\ \hline 43 \end{array}$$



$$\begin{array}{r} \text{i.} \\ \rightarrow 28 \\ + 20 \leftarrow - \\ \hline 48 \end{array}$$



$$\begin{array}{r} \text{k.} \\ 20 \leftarrow - \\ + 35 \leftarrow - \\ \hline 55 \end{array}$$



$$\begin{array}{r} \text{l.} \\ \rightarrow 15 \\ + 35 \leftarrow - \\ \hline 50 \end{array}$$

Please encourage children to use loose counters, beansticks, rods or sketches for this page and any others where needed.

A. 30

B.

C. 32

D. 31

A.

$$\begin{array}{r} 10 \\ + 20 \\ \hline 30 \end{array}$$

B.

$$\begin{array}{r} 10 \\ + 19 \\ \hline 29 \end{array}$$

C.

$$\begin{array}{r} 20 \\ + 12 \\ \hline 32 \end{array}$$

D.

$$\begin{array}{r} 19 \\ + 12 \\ \hline 31 \end{array}$$

E. 19

F.

G. 46

H.

E.

$$\begin{array}{r} 7 \\ + 12 \\ \hline 19 \end{array}$$

F.

$$\begin{array}{r} 7 \\ + 5 \\ \hline 12 \end{array}$$

G.

$$\begin{array}{r} 23 \\ + 23 \\ \hline 46 \end{array}$$

H.

$$\begin{array}{r} 23 \\ + 16 \\ \hline 39 \end{array}$$

I.

J. 14

K. 39

L.

I.

$$\begin{array}{r} 12 \\ + 17 \\ \hline 29 \end{array}$$

J.

$$\begin{array}{r} 8 \\ + 6 \\ \hline 14 \end{array}$$

K.

$$\begin{array}{r} 23 \\ + 16 \\ \hline 39 \end{array}$$

L.

$$\begin{array}{r} 13 \\ + 16 \\ \hline 29 \end{array}$$

M.

N. 11

O.

P.

M.

$$\begin{array}{r} 5 \\ + 8 \\ \hline 13 \end{array}$$

N.

$$\begin{array}{r} 5 \\ + 6 \\ \hline 11 \end{array}$$

O.

$$\begin{array}{r} 19 \\ + 2 \\ \hline 21 \end{array}$$

P.

$$\begin{array}{r} 4 \\ + 7 \\ \hline 11 \end{array}$$

a. 39

b.

c.

d. 48

a.

$$\begin{array}{r} 18 \\ + 21 \\ \hline 39 \end{array}$$

b.

$$\begin{array}{r} 6 \\ + 23 \\ \hline 29 \end{array}$$

c.

$$\begin{array}{r} 9 \\ + 7 \\ \hline 16 \end{array}$$

d.

$$\begin{array}{r} 17 \\ + 31 \\ \hline 48 \end{array}$$

e.

f. 59

g. 17

h.

i.

j.

k. 22

l.

e.

$$\begin{array}{r} 23 \\ + 24 \\ \hline 47 \end{array}$$

f.

$$\begin{array}{r} 23 \\ + 36 \\ \hline 59 \end{array}$$

g.

$$\begin{array}{r} 8 \\ + 9 \\ \hline 17 \end{array}$$

h.

$$\begin{array}{r} 15 \\ + 4 \\ \hline 19 \end{array}$$

i.

$$\begin{array}{r} 18 \\ + 2 \\ \hline 20 \end{array}$$

j.

$$\begin{array}{r} 36 \\ + 32 \\ \hline 68 \end{array}$$

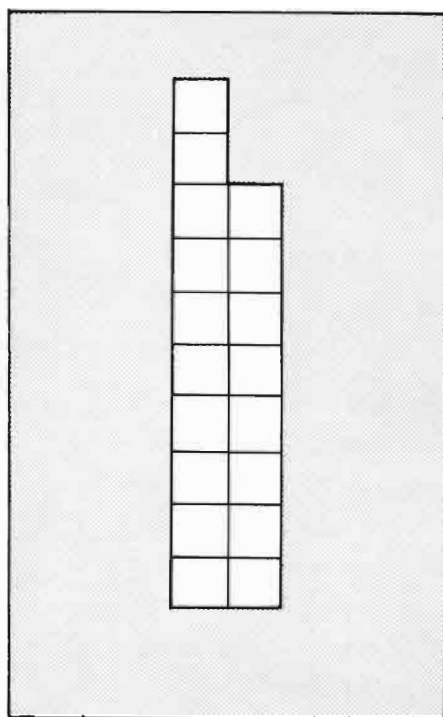
k.

$$\begin{array}{r} 19 \\ + 3 \\ \hline 22 \end{array}$$

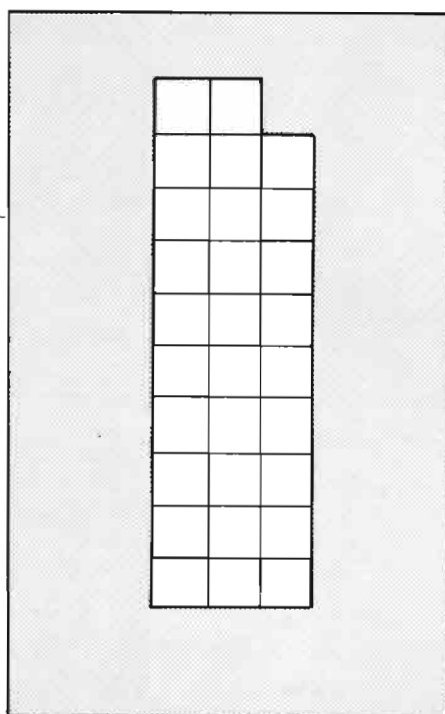
l.

$$\begin{array}{r} 15 \\ + 5 \\ \hline 20 \end{array}$$

Loose counters or sketches may be desirable for the examples on right of this page. See: A P/P p 56-58.



$$\begin{array}{r} 18 \\ + 29 \\ \hline 47 \end{array}$$



$$\begin{array}{r} 12 \\ + 17 \\ \hline 29 \end{array}$$

$$\begin{array}{r} 15 \\ + 18 \\ \hline 33 \end{array}$$

$$\begin{array}{r} 29 \\ + 6 \\ \hline 35 \end{array}$$

$$\begin{array}{r} 18 \\ + 32 \\ \hline 50 \end{array}$$

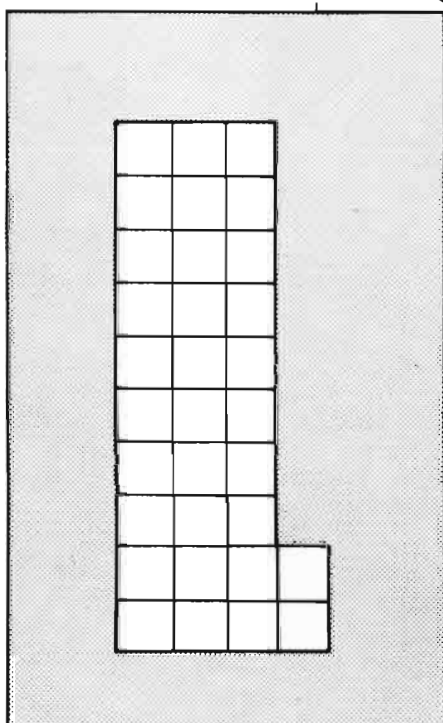
How do you feel?
¿Cómo se siente?



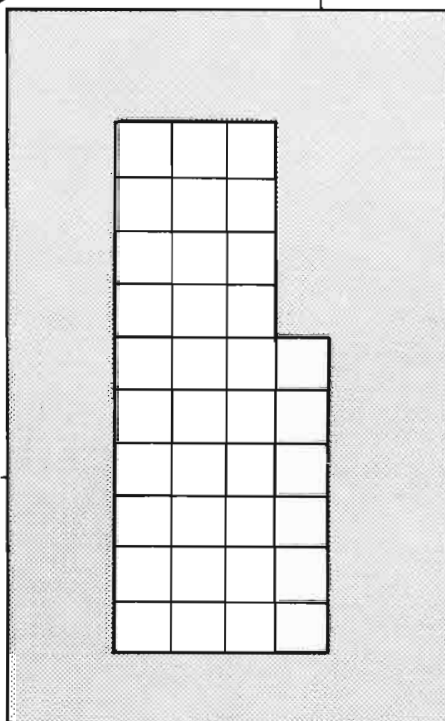
$$\begin{array}{r} 29 \\ + 36 \\ \hline 65 \end{array}$$

$$\begin{array}{r} 36 \\ + 32 \\ \hline 68 \end{array}$$

$$\begin{array}{r} 29 \\ + 18 \\ \hline 47 \end{array}$$



$$\begin{array}{r} 32 \\ + 36 \\ \hline 68 \end{array}$$



Dear Parents,

Your child has demonstrated the ability to add quite large numbers together with a high degree of accuracy. Perhaps the pictured squares are still being counted laboriously, one by one. Hopefully the “counting on” process will have been discovered by now, making the sum-finding faster. It won’t be long until your child finds it faster to mentally add the stacks of ten blocks together, then the ones. A game can be made by trading ten loose beans for a solid “ten-stick”.

At any rate, the whole idea of the place value of numbers, “carrying” and “borrowing” is a very complicated thing for young children to learn. They must be given plenty of time and lots of counting with real objects. Working with dimes and pennies is an interesting way to help teach this understanding.

We know that one of the best ways to reinforce learning is for the learner to teach what was just learned to someone else. Your child’s understanding will be promoted anytime you can assist that happening.

Subtraction involving large numbers is next. Help us keep your child encouraged and feeling successful!

Sincerely,

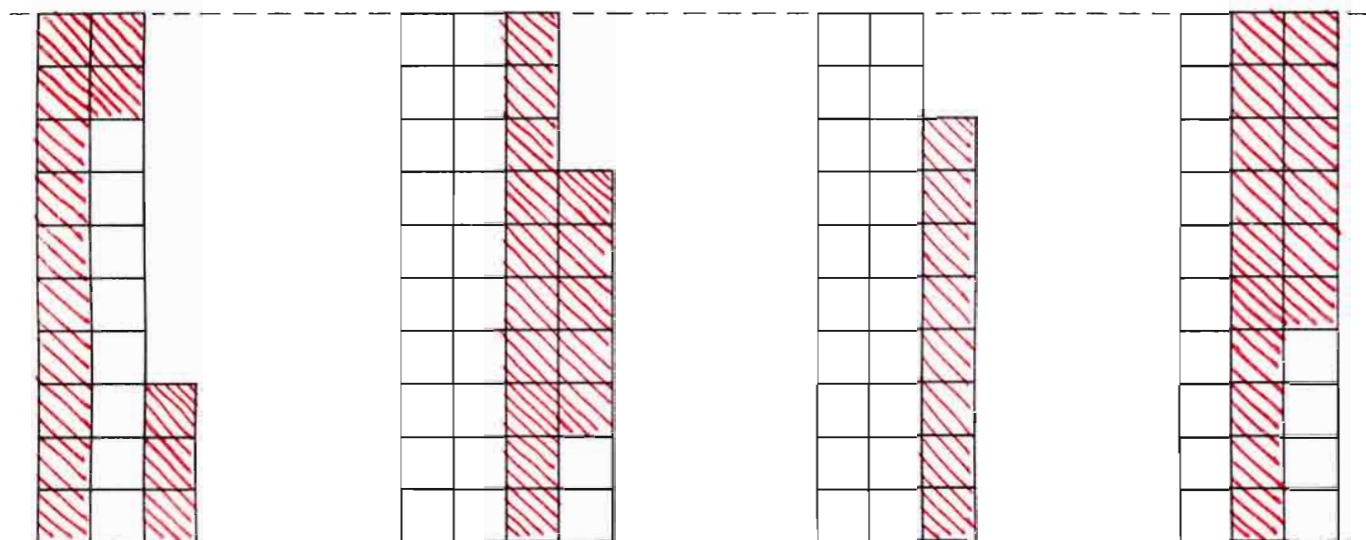
Here the child darkens in the number of squares he wishes to subtract and records what he has done. He records the total number of squares shown in the top box below. See: D.I. p 90-96

$\begin{array}{r} 9 \\ - 4 \\ \hline 5 \end{array}$	$\begin{array}{r} 7 \\ - 1 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ - \\ \hline \end{array}$	$\begin{array}{r} 11 \\ - \\ \hline \end{array}$	$\begin{array}{r} 12 \\ - \\ \hline \end{array}$	$\begin{array}{r} 15 \\ - \\ \hline \end{array}$

Another opportunity for peer instruction.

$\begin{array}{r} 13 \\ - \\ \hline \end{array}$	$\begin{array}{r} 16 \\ - \\ \hline \end{array}$	$\begin{array}{r} 20 \\ - \\ \hline \end{array}$	$\begin{array}{r} 18 \\ - \\ \hline \end{array}$	$\begin{array}{r} 25 \\ - \\ \hline \end{array}$

Note: This page may be used as an informal check to see whether the child is ready to go on.

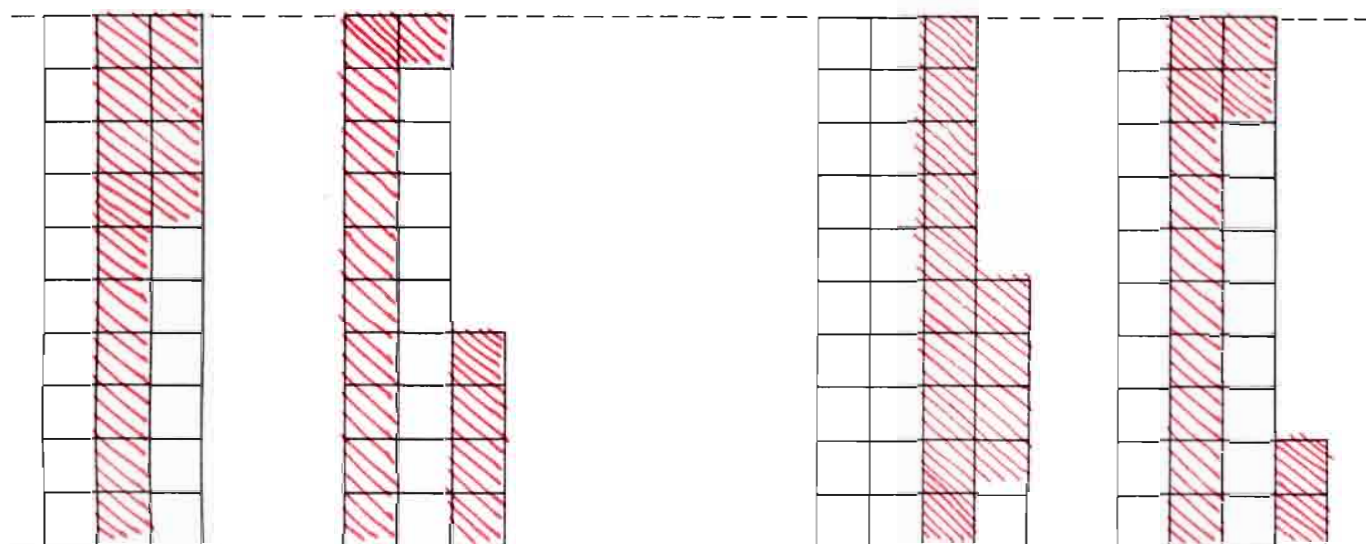


$$\begin{array}{r} 23 \\ - 15 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 37 \\ - 15 \\ \hline 22 \end{array}$$

$$\begin{array}{r} 28 \\ - 8 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 30 \\ - 16 \\ \hline 14 \end{array}$$



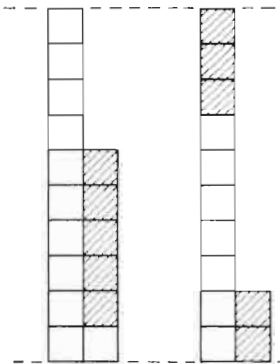
$$\begin{array}{r} 30 \\ - 14 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 24 \\ - 15 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 35 \\ - 14 \\ \hline 21 \end{array}$$

$$\begin{array}{r} 32 \\ - 14 \\ \hline 18 \end{array}$$

If a need is apparent at this stage you might encourage the student to retain this page and the next two as aids for page 40. See: A P/P 61-62



A.
$$\begin{array}{r} 16 \\ - 5 \\ \hline 11 \end{array}$$

B.
$$\begin{array}{r} 12 \\ - 5 \\ \hline \end{array}$$

C.
$$\begin{array}{r} 15 \\ - 5 \\ \hline \end{array}$$

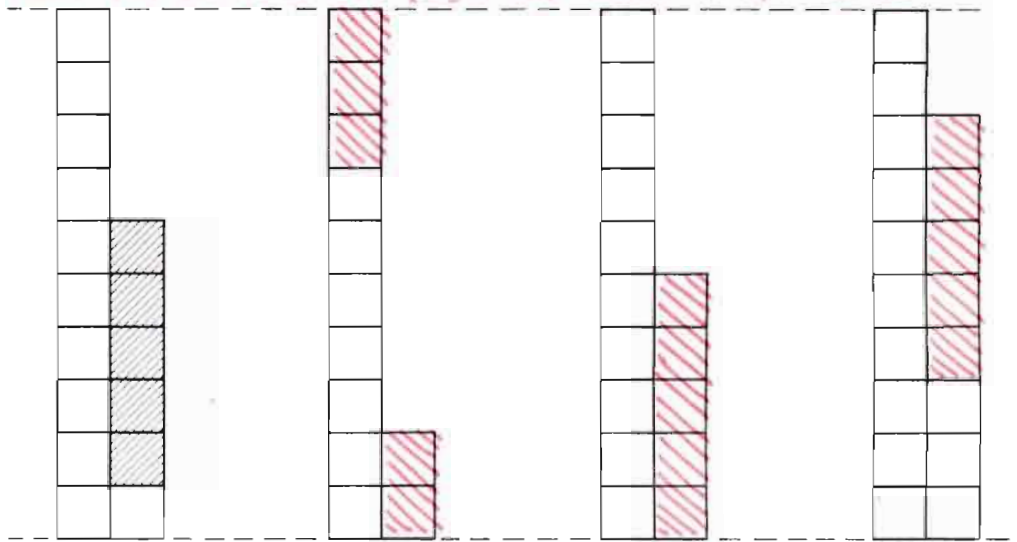
D.
$$\begin{array}{r} \\ - 5 \\ \hline 13 \end{array}$$

E.
$$\begin{array}{r} 11 \\ - 7 \\ \hline \end{array}$$

F.
$$\begin{array}{r} \\ - 7 \\ \hline 10 \end{array}$$

G.
$$\begin{array}{r} 19 \\ - 7 \\ \hline \end{array}$$

H.
$$\begin{array}{r} \\ - 7 \\ \hline \end{array}$$

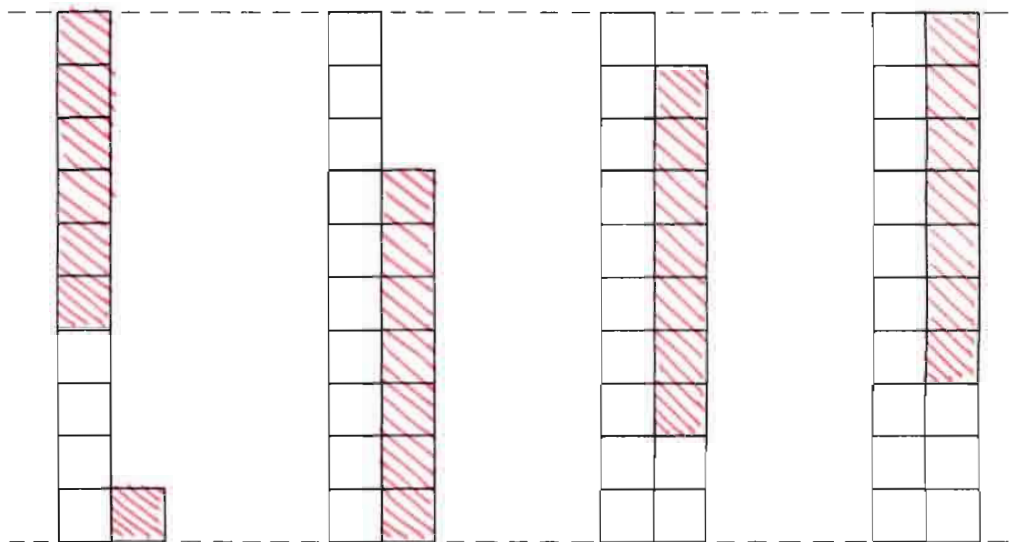


A.
$$\begin{array}{r} 16 \\ - 5 \\ \hline 11 \end{array}$$

B.
$$\begin{array}{r} 12 \\ - 5 \\ \hline 7 \end{array}$$

C.
$$\begin{array}{r} 15 \\ - 5 \\ \hline 10 \end{array}$$

D.
$$\begin{array}{r} 18 \\ - 5 \\ \hline 13 \end{array}$$

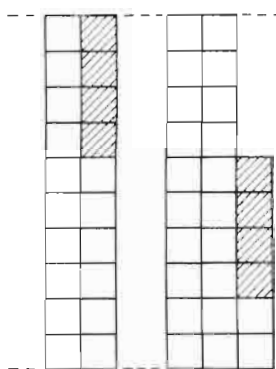


E.
$$\begin{array}{r} 11 \\ - 7 \\ \hline 4 \end{array}$$

F.
$$\begin{array}{r} 17 \\ - 7 \\ \hline 10 \end{array}$$

G.
$$\begin{array}{r} 19 \\ - 7 \\ \hline 12 \end{array}$$

H.
$$\begin{array}{r} 20 \\ - 7 \\ \hline 13 \end{array}$$



I.

$$\begin{array}{r} 20 \\ - 4 \\ \hline 16 \end{array}$$

J.

$$\begin{array}{r} \\ - 4 \\ \hline \end{array}$$

K.

$$\begin{array}{r} 34 \\ - 4 \\ \hline \end{array}$$

L.

$$\begin{array}{r} \\ - \\ \hline 18 \end{array}$$

M.

$$\begin{array}{r} 20 \\ - 10 \\ \hline \end{array}$$

N.

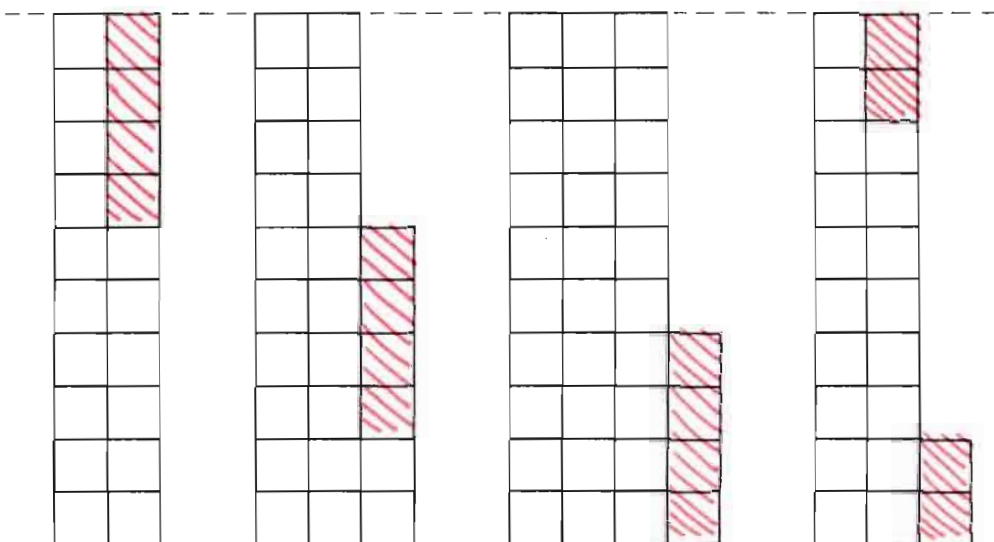
$$\begin{array}{r} \\ - \\ \hline 20 \end{array}$$

O.

$$\begin{array}{r} 27 \\ - 23 \\ \hline \end{array}$$

P.

$$\begin{array}{r} \\ - \\ \hline \end{array}$$



I.

$$\begin{array}{r} 20 \\ - 4 \\ \hline 16 \end{array}$$

J.

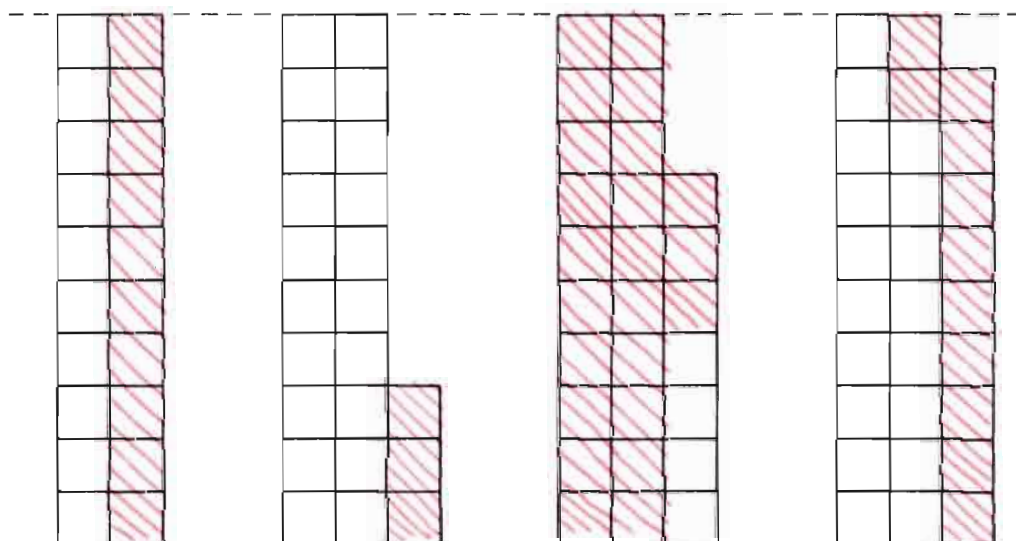
$$\begin{array}{r} 26 \\ - 4 \\ \hline 22 \end{array}$$

K.

$$\begin{array}{r} 34 \\ - 4 \\ \hline 30 \end{array}$$

L.

$$\begin{array}{r} 22 \\ - 4 \\ \hline 18 \end{array}$$



M.

$$\begin{array}{r} 20 \\ - 10 \\ \hline 10 \end{array}$$

N.

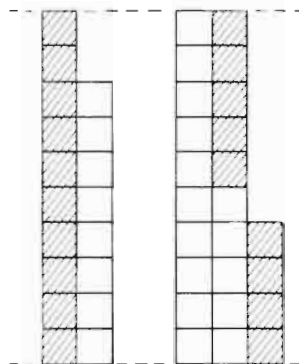
$$\begin{array}{r} 23 \\ - 3 \\ \hline 20 \end{array}$$

O.

$$\begin{array}{r} 27 \\ - 23 \\ \hline 4 \end{array}$$

P.

$$\begin{array}{r} 29 \\ - 11 \\ \hline 18 \end{array}$$



Q.

$$\begin{array}{r} 18 \\ - 10 \\ \hline 8 \end{array}$$

R.

$$\begin{array}{r} \\ - 9 \\ \hline \end{array}$$

S.

$$\begin{array}{r} 29 \\ - 9 \\ \hline \end{array}$$

T.

$$\begin{array}{r} 21 \\ - 10 \\ \hline \end{array}$$

U.

$$\begin{array}{r} \\ - \\ \hline 11 \end{array}$$

V.

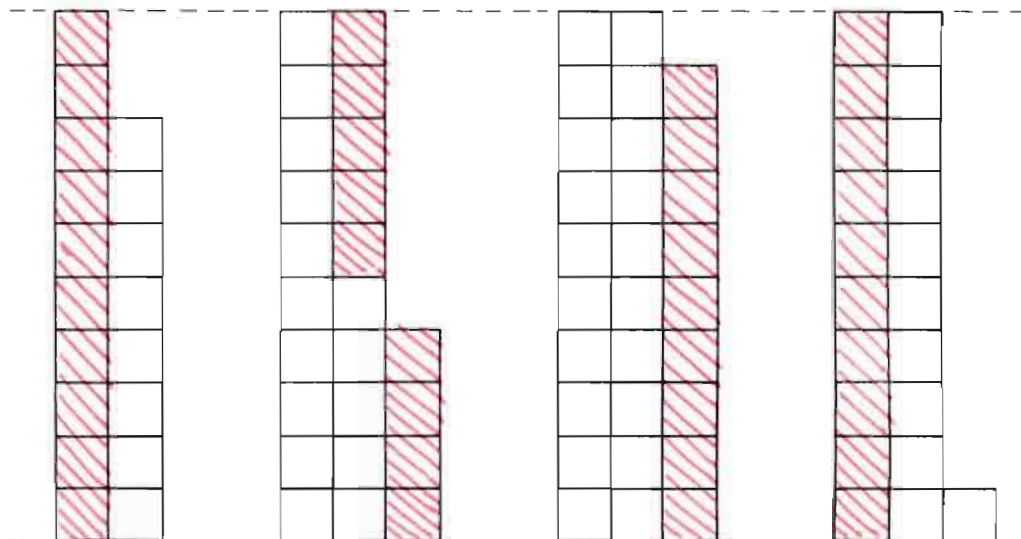
$$\begin{array}{r} \\ - \\ \hline 20 \end{array}$$

W.

$$\begin{array}{r} 33 \\ - 9 \\ \hline \end{array}$$

X.

$$\begin{array}{r} \\ - \\ \hline \end{array}$$



Q.

$$\begin{array}{r} 18 \\ - 10 \\ \hline 8 \end{array}$$

R.

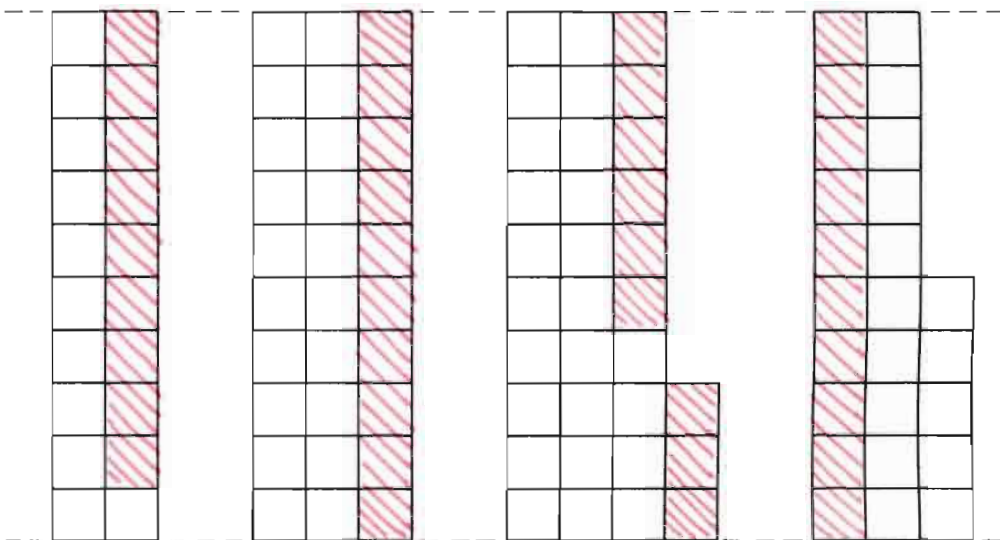
$$\begin{array}{r} 24 \\ - 9 \\ \hline 15 \end{array}$$

S.

$$\begin{array}{r} 29 \\ - 9 \\ \hline 20 \end{array}$$

T.

$$\begin{array}{r} 21 \\ - 10 \\ \hline 11 \end{array}$$



U.

$$\begin{array}{r} 20 \\ - 9 \\ \hline 11 \end{array}$$

V.

$$\begin{array}{r} 30 \\ - 10 \\ \hline 20 \end{array}$$

W.

$$\begin{array}{r} 33 \\ - 9 \\ \hline 24 \end{array}$$

X.

$$\begin{array}{r} 25 \\ - 10 \\ \hline 15 \end{array}$$

A. $\begin{array}{r} 11 \\ - 7 \\ \hline 10 \end{array}$

E. $\begin{array}{r} 4 \\ - 12 \\ \hline 8 \end{array}$

I. $\begin{array}{r} 16 \\ - 4 \\ \hline 12 \end{array}$

M. $\begin{array}{r} 10 \\ - 20 \\ \hline 10 \end{array}$

Q. $\begin{array}{r} 8 \\ - 20 \\ \hline 12 \end{array}$

U. $\begin{array}{r} 20 \\ - 15 \\ \hline 5 \end{array}$

A. $\begin{array}{r} 16 \\ - 5 \\ \hline 11 \end{array}$

B. $\begin{array}{r} 12 \\ - 5 \\ \hline 7 \end{array}$

C. $\begin{array}{r} 15 \\ - 5 \\ \hline 10 \end{array}$

D. $\begin{array}{r} 18 \\ - 5 \\ \hline 13 \end{array}$

E. $\begin{array}{r} 11 \\ - 7 \\ \hline 4 \end{array}$

F. $\begin{array}{r} 17 \\ - 7 \\ \hline 10 \end{array}$

G. $\begin{array}{r} 19 \\ - 7 \\ \hline 12 \end{array}$

H. $\begin{array}{r} 10 \\ - 7 \\ \hline 3 \end{array}$

I. $\begin{array}{r} 20 \\ - 4 \\ \hline 16 \end{array}$

J. $\begin{array}{r} 26 \\ - 4 \\ \hline 22 \end{array}$

K. $\begin{array}{r} 34 \\ - 4 \\ \hline 30 \end{array}$

L. $\begin{array}{r} 12 \\ - 4 \\ \hline 8 \end{array}$

M. $\begin{array}{r} 20 \\ - 10 \\ \hline 10 \end{array}$

N. $\begin{array}{r} 23 \\ - 3 \\ \hline 20 \end{array}$

O. $\begin{array}{r} 27 \\ - 23 \\ \hline 4 \end{array}$

P. $\begin{array}{r} 29 \\ - 11 \\ \hline 18 \end{array}$

Note: If the children have difficulty with this form, they may wish to get out counters to find the answers or refer to the preceding three pages.

Q. $\begin{array}{r} 18 \\ - 10 \\ \hline 8 \end{array}$

R. $\begin{array}{r} 29 \\ - 4 \\ \hline 25 \end{array}$

S. $\begin{array}{r} 29 \\ - 9 \\ \hline 20 \end{array}$

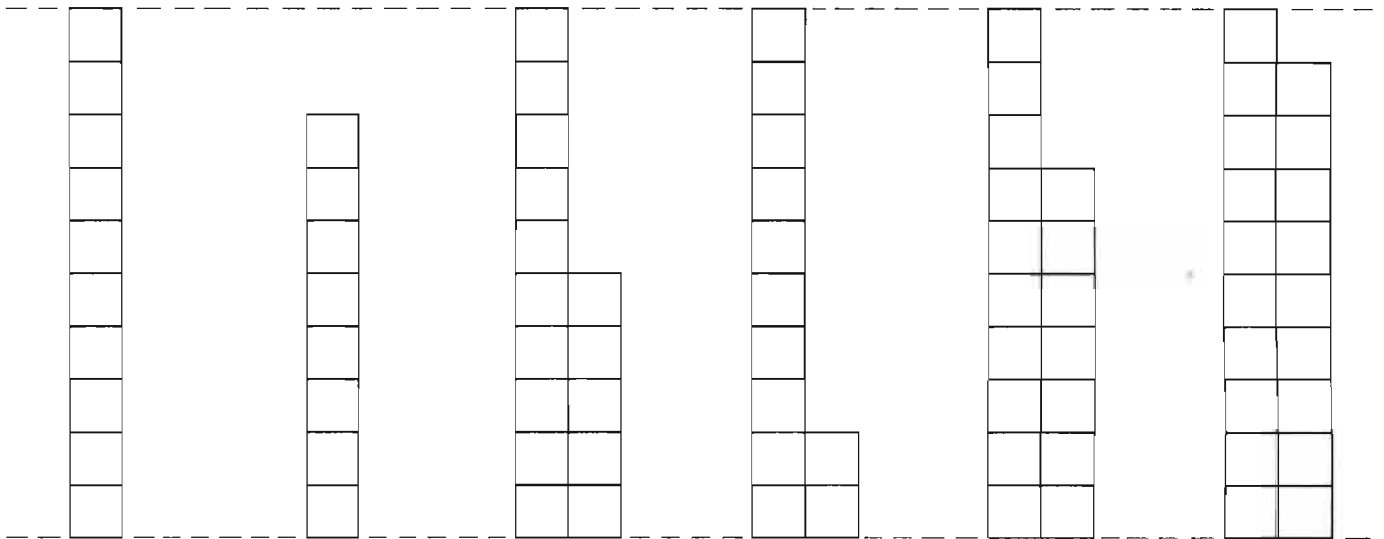
T. $\begin{array}{r} 11 \\ - 10 \\ \hline 1 \end{array}$

U. $\begin{array}{r} 10 \\ - 8 \\ \hline 2 \end{array}$

V. $\begin{array}{r} 30 \\ - 10 \\ \hline 20 \end{array}$

W. $\begin{array}{r} 13 \\ - 9 \\ \hline 4 \end{array}$

X. $\begin{array}{r} 25 \\ - 10 \\ \hline 15 \end{array}$



$$\begin{array}{r} 10 \\ - \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ - \\ \hline \end{array}$$

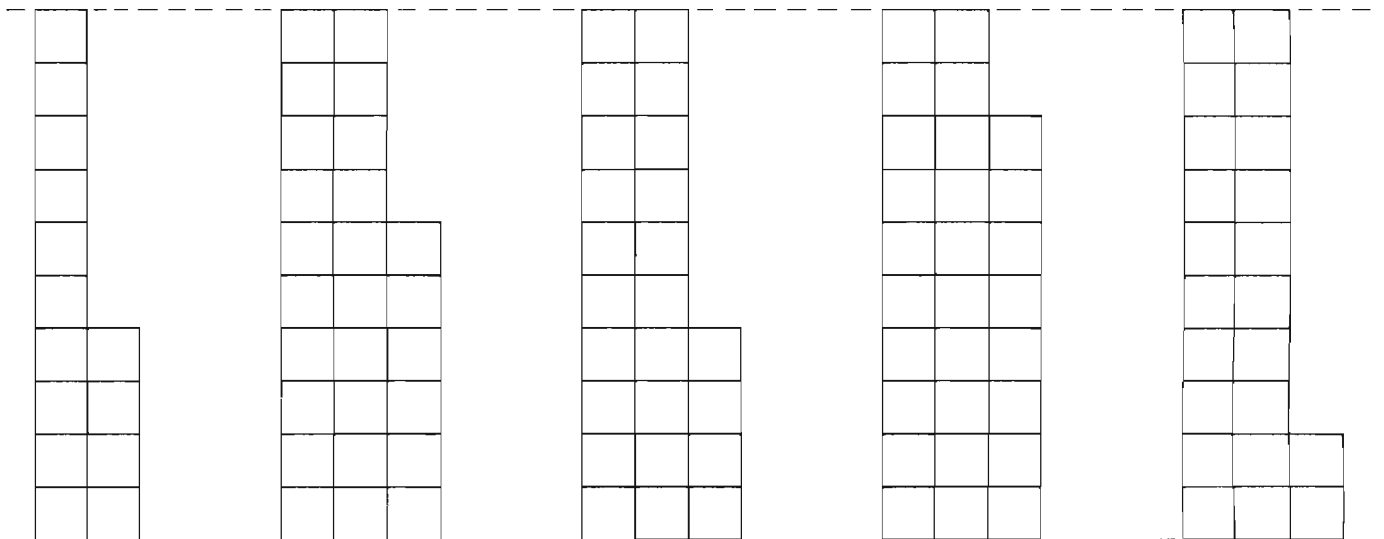
$$\begin{array}{r} 15 \\ - \\ \hline \end{array}$$

$$\begin{array}{r} 12 \\ - \\ \hline \end{array}$$

$$\begin{array}{r} 17 \\ - \\ \hline \end{array}$$

$$\begin{array}{r} 19 \\ - \\ \hline \end{array}$$

Here the child may make up her own examples by shading in the number of blocks she wishes to subtract.



$$\begin{array}{r} 14 \\ - \\ \hline \end{array}$$

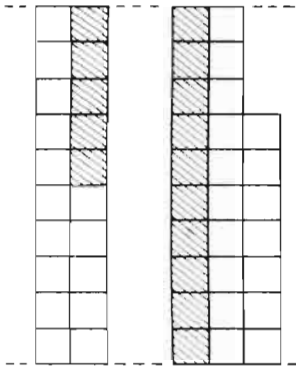
$$\begin{array}{r} 26 \\ - \\ \hline \end{array}$$

$$\begin{array}{r} 24 \\ - \\ \hline \end{array}$$

$$\begin{array}{r} 28 \\ - \\ \hline \end{array}$$

$$\begin{array}{r} 22 \\ - \\ \hline \end{array}$$

Again the child might be encouraged to save this page and the next two until p. 45 is completed.



a.

$$\begin{array}{r} 20 \\ - 5 \\ \hline 15 \end{array}$$

b.

$$\begin{array}{r} \\ - 10 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 25 \\ - 15 \\ \hline \end{array}$$

d.

$$\begin{array}{r} \\ - \\ \hline \end{array}$$

e.

$$\begin{array}{r} 22 \\ - 5 \\ \hline \end{array}$$

f.

$$\begin{array}{r} \\ - \\ \hline 20 \end{array}$$

g.

$$\begin{array}{r} 24 \\ - 15 \\ \hline \end{array}$$

h.

$$\begin{array}{r} \\ - \\ \hline \end{array}$$



a.

$$\begin{array}{r} 20 \\ - 5 \\ \hline 15 \end{array}$$



b.

$$\begin{array}{r} 27 \\ - 10 \\ \hline 17 \end{array}$$



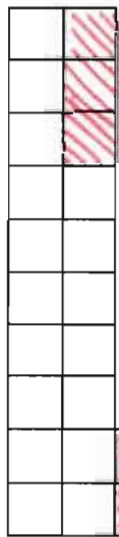
c.

$$\begin{array}{r} 25 \\ - 15 \\ \hline 10 \end{array}$$



d.

$$\begin{array}{r} 23 \\ - 15 \\ \hline 8 \end{array}$$



e.

$$\begin{array}{r} 22 \\ - 5 \\ \hline 17 \end{array}$$



f.

$$\begin{array}{r} 30 \\ - 10 \\ \hline 20 \end{array}$$



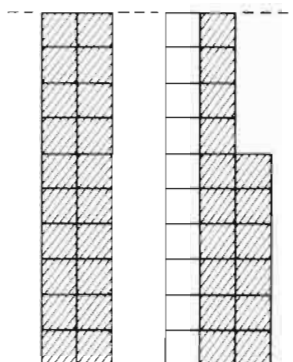
g.

$$\begin{array}{r} 24 \\ - 15 \\ \hline 9 \end{array}$$



h.

$$\begin{array}{r} 37 \\ - 15 \\ \hline 22 \end{array}$$



i.

$$\begin{array}{r} 20 \\ - 20 \\ \hline 0 \end{array}$$

j.

$$\begin{array}{r} \\ - \\ \hline \end{array}$$

k.

$$\begin{array}{r} 34 \\ - 20 \\ \hline \end{array}$$

l.

$$\begin{array}{r} \\ - \\ \hline \end{array}$$



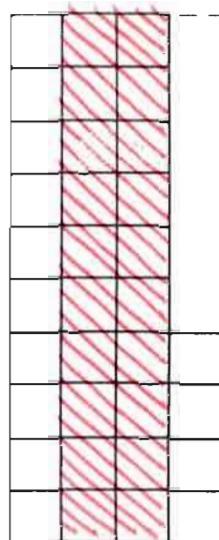
i.

$$\begin{array}{r} 20 \\ - 20 \\ \hline 0 \end{array}$$



j.

$$\begin{array}{r} 26 \\ - 16 \\ \hline 10 \end{array}$$



k.

$$\begin{array}{r} 34 \\ - 20 \\ \hline 14 \end{array}$$



l.

$$\begin{array}{r} 28 \\ - 8 \\ \hline 20 \end{array}$$

m.

$$\begin{array}{r} 26 \\ - 16 \\ \hline \end{array}$$

n.

$$\begin{array}{r} \\ - \\ \hline 18 \end{array}$$

o.

$$\begin{array}{r} 28 \\ - 16 \\ \hline \end{array}$$

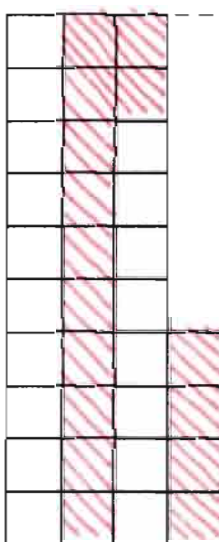
p.

$$\begin{array}{r} \\ - \\ \hline \end{array}$$



m.

$$\begin{array}{r} 26 \\ - 16 \\ \hline 10 \end{array}$$



n.

$$\begin{array}{r} 34 \\ - 16 \\ \hline 18 \end{array}$$



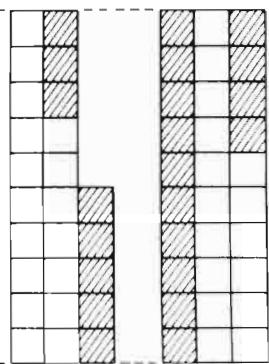
o.

$$\begin{array}{r} 28 \\ - 16 \\ \hline 12 \end{array}$$



p.

$$\begin{array}{r} 30 \\ - 16 \\ \hline 14 \end{array}$$



$$\begin{array}{r} q \\ 25 \\ - 8 \\ \hline 17 \end{array}$$

$$\begin{array}{r} r \\ 30 \\ - 14 \\ \hline \end{array}$$

$$\begin{array}{r} s \\ \\ - \\ \hline 16 \end{array}$$

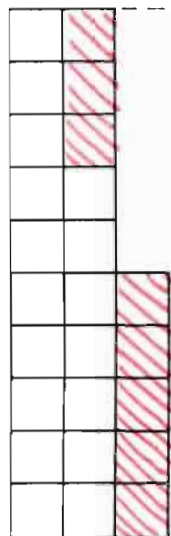
$$\begin{array}{r} t \\ 20 \\ - 8 \\ \hline \end{array}$$

$$\begin{array}{r} u \\ \\ - \\ \hline 15 \end{array}$$

$$\begin{array}{r} v \\ 31 \\ - 12 \\ \hline \end{array}$$

$$\begin{array}{r} w \\ 24 \\ - 15 \\ \hline \end{array}$$

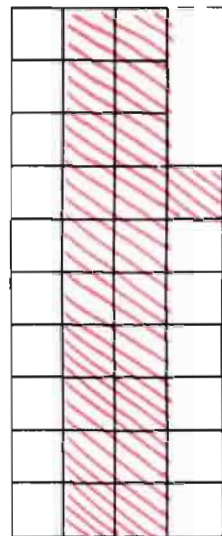
$$\begin{array}{r} x \\ \\ - \\ \hline 19 \end{array}$$



$$\begin{array}{r} q \\ 25 \\ - 8 \\ \hline 17 \end{array}$$



$$\begin{array}{r} r \\ 30 \\ - 14 \\ \hline 16 \end{array}$$



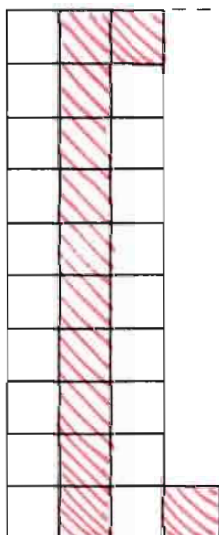
$$\begin{array}{r} s \\ 37 \\ - 21 \\ \hline 16 \end{array}$$



$$\begin{array}{r} t \\ 20 \\ - 8 \\ \hline 12 \end{array}$$



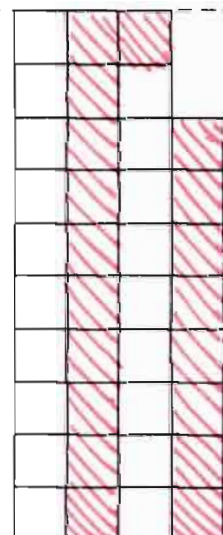
$$\begin{array}{r} u \\ 19 \\ - 4 \\ \hline 15 \end{array}$$



$$\begin{array}{r} v \\ 31 \\ - 12 \\ \hline 19 \end{array}$$



$$\begin{array}{r} w \\ 24 \\ - 15 \\ \hline 9 \end{array}$$



$$\begin{array}{r} x \\ 38 \\ - 19 \\ \hline 19 \end{array}$$

A. $\begin{array}{r} 15 \\ - \\ \hline \end{array}$

B. $\begin{array}{r} 17 \\ - \\ \hline \end{array}$

C. $\begin{array}{r} \\ - \\ \hline \end{array}$

D. $\begin{array}{r} \\ - \\ \hline \end{array}$

E. $\begin{array}{r} \\ - \\ \hline \end{array}$

F. $\begin{array}{r} 20 \\ - \\ \hline \end{array}$

G. $\begin{array}{r} \\ - \\ \hline \end{array}$

H. $\begin{array}{r} \\ - \\ \hline \end{array}$

I. $\begin{array}{r} 0 \\ - \\ \hline \end{array}$

J. $\begin{array}{r} 10 \\ - \\ \hline \end{array}$

K. $\begin{array}{r} \\ - \\ \hline \end{array}$

L. $\begin{array}{r} 20 \\ - \\ \hline \end{array}$

M. $\begin{array}{r} 10 \\ - \\ \hline \end{array}$

N. $\begin{array}{r} \\ - \\ \hline \end{array}$

O. $\begin{array}{r} 12 \\ - \\ \hline \end{array}$

P. $\begin{array}{r} \\ - \\ \hline \end{array}$

Q. $\begin{array}{r} \\ - \\ \hline \end{array}$

R. $\begin{array}{r} 16 \\ - \\ \hline \end{array}$

S. $\begin{array}{r} 16 \\ - \\ \hline \end{array}$

T. $\begin{array}{r} \\ - \\ \hline \end{array}$

U. $\begin{array}{r} 15 \\ - \\ \hline \end{array}$

V. $\begin{array}{r} \\ - \\ \hline \end{array}$

W. $\begin{array}{r} \\ - \\ \hline \end{array}$

X. $\begin{array}{r} \\ - \\ \hline \end{array}$

A. $\begin{array}{r} 20 \\ - 5 \\ \hline 15 \end{array}$

B. $\begin{array}{r} 27 \\ - 10 \\ \hline 17 \end{array}$

C. $\begin{array}{r} 23 \\ - 3 \\ \hline 20 \end{array}$

D. $\begin{array}{r} 23 \\ - 4 \\ \hline 19 \end{array}$

E. $\begin{array}{r} 23 \\ - 5 \\ \hline 18 \end{array}$

F. $\begin{array}{r} 30 \\ - 10 \\ \hline 20 \end{array}$

G. $\begin{array}{r} 24 \\ - 5 \\ \hline 19 \end{array}$

H. $\begin{array}{r} 16 \\ - 8 \\ \hline 8 \end{array}$

I. $\begin{array}{r} 20 \\ - 20 \\ \hline 0 \end{array}$

J. $\begin{array}{r} 26 \\ - 16 \\ \hline 10 \end{array}$

K. $\begin{array}{r} 34 \\ - 20 \\ \hline 14 \end{array}$

L. $\begin{array}{r} 28 \\ - 8 \\ \hline 20 \end{array}$

M. $\begin{array}{r} 26 \\ - 16 \\ \hline 10 \end{array}$

N. $\begin{array}{r} 30 \\ - 5 \\ \hline 25 \end{array}$

O. $\begin{array}{r} 28 \\ - 16 \\ \hline 12 \end{array}$

P. $\begin{array}{r} 16 \\ - 7 \\ \hline 9 \end{array}$

Q. $\begin{array}{r} 15 \\ - 8 \\ \hline 7 \end{array}$

R. $\begin{array}{r} 20 \\ - 4 \\ \hline 16 \end{array}$

S. $\begin{array}{r} 37 \\ - 21 \\ \hline 16 \end{array}$

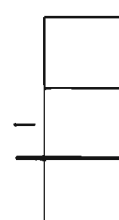
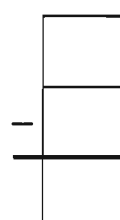
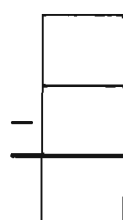
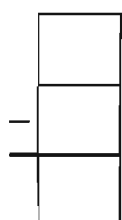
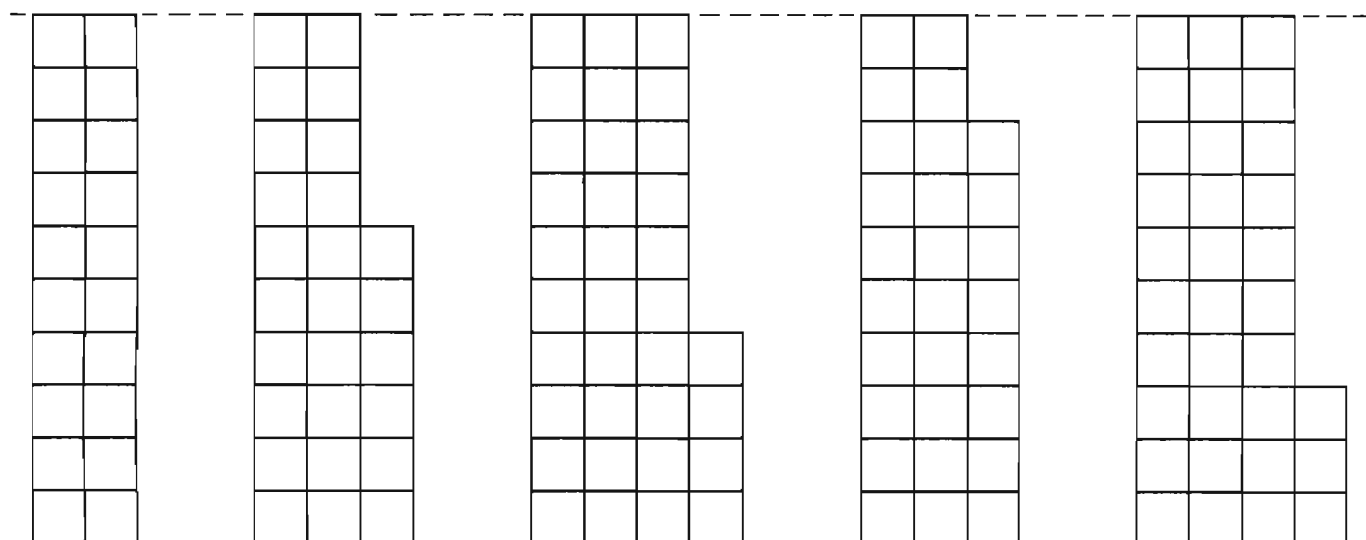
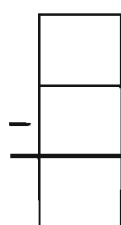
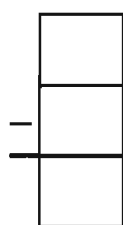
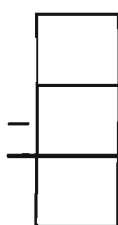
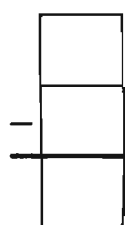
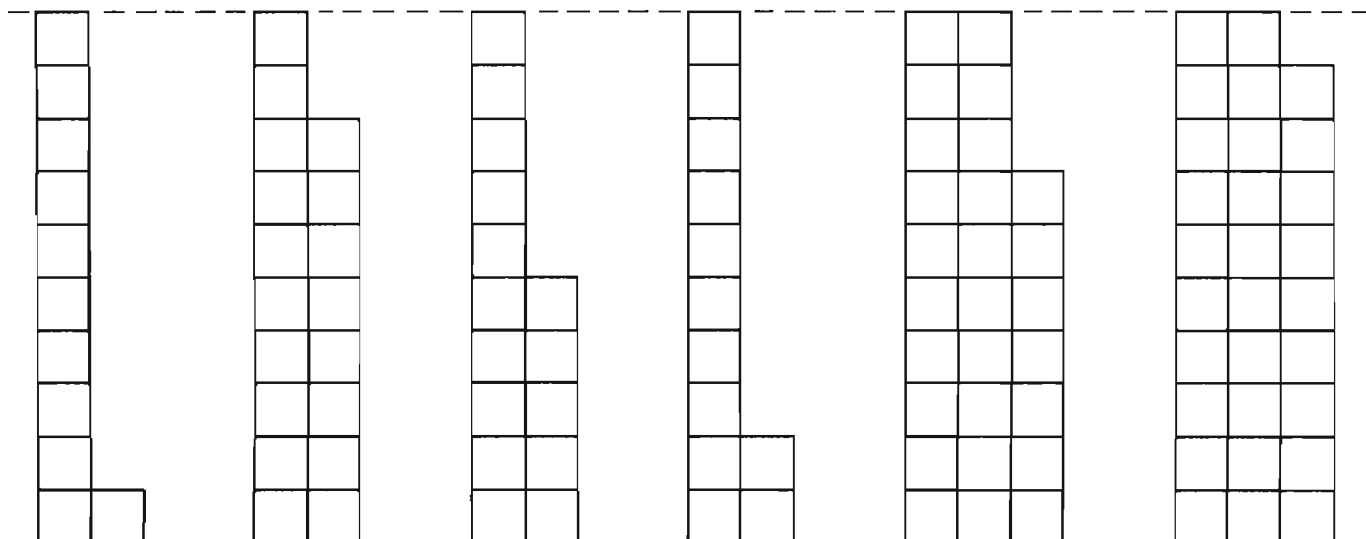
T. $\begin{array}{r} 15 \\ - 8 \\ \hline 7 \end{array}$

U. $\begin{array}{r} 19 \\ - 4 \\ \hline 15 \end{array}$

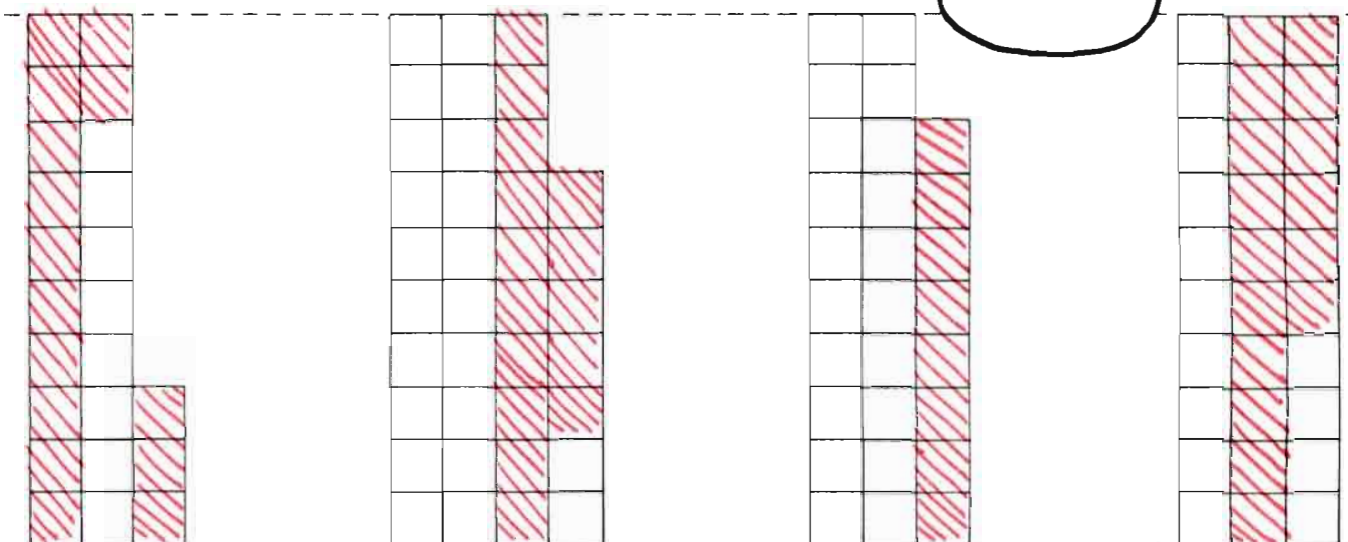
V. $\begin{array}{r} 31 \\ - 10 \\ \hline 21 \end{array}$

W. $\begin{array}{r} 20 \\ - 3 \\ \hline 17 \end{array}$

X. $\begin{array}{r} 18 \\ - 9 \\ \hline 9 \end{array}$



How do you feel?
¿Cómo se siente?

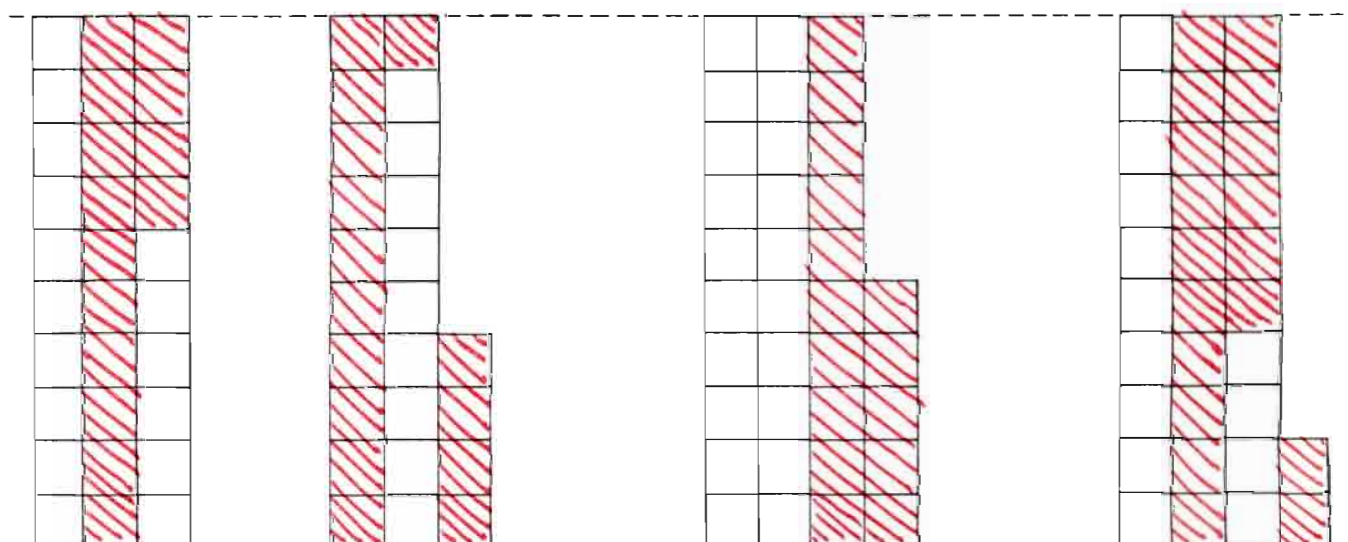


$$\begin{array}{r} 23 \\ - 15 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 37 \\ - 15 \\ \hline 22 \end{array}$$

$$\begin{array}{r} 28 \\ - 8 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 30 \\ - 16 \\ \hline 14 \end{array}$$



$$\begin{array}{r} 30 \\ - 14 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 24 \\ - 15 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 35 \\ - 15 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 32 \\ - 18 \\ \hline 14 \end{array}$$

Dear Parents,

Given a set of blocks to count, your child can record how many there are, shade in the number of blocks to be taken away, count what is left over, and record this data. Isn't it amazing what rather complicated problems young children can solve if they are given real things or pictured things to count? Normally problems like this have been introduced at a much later time, by-passing the opportunity to count things, and throwing the child suddenly into the abstract world of manipulating numbers. It is here that many children have become lost, have decided that math is an unintelligible bore. Maybe it happened to you!

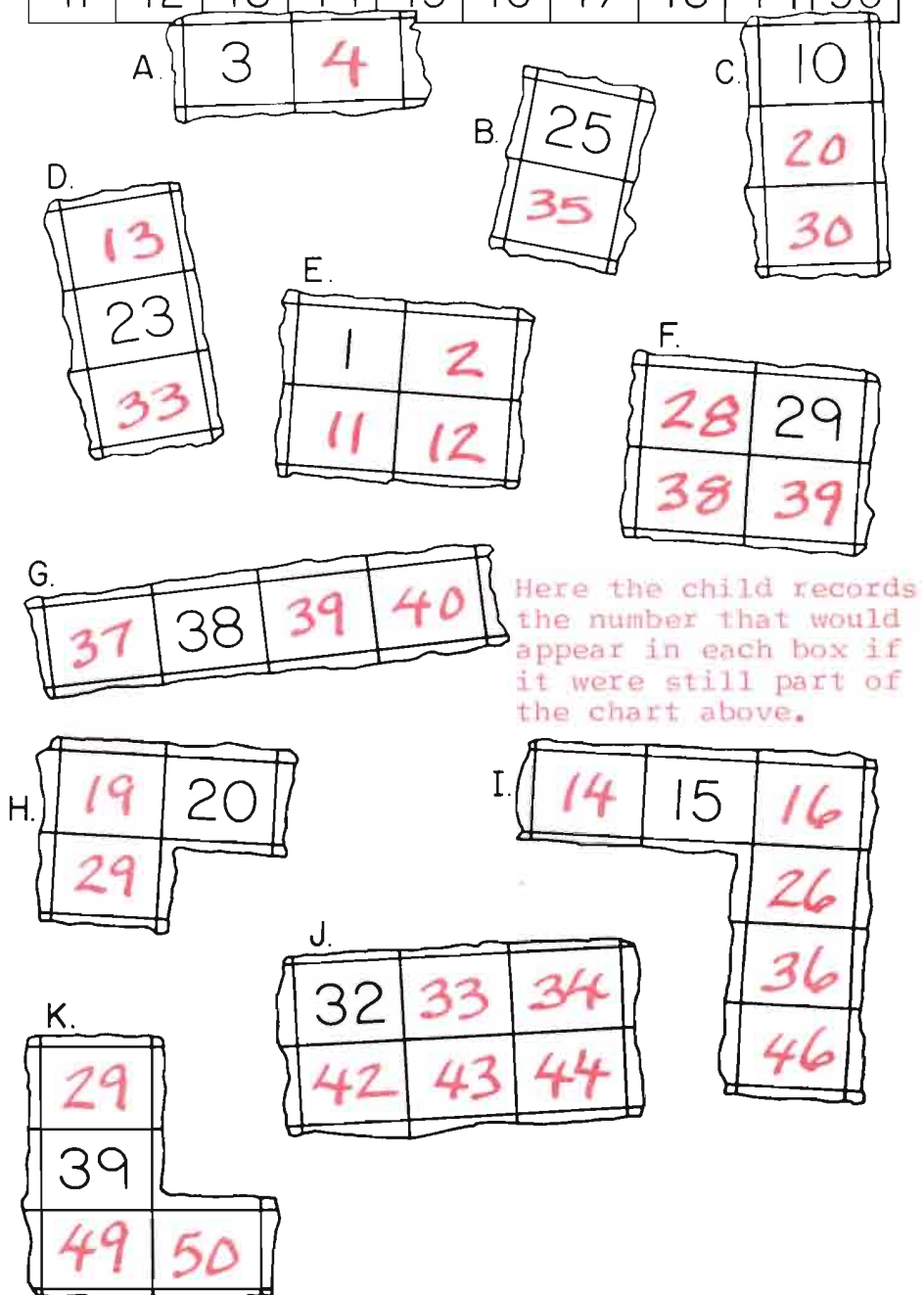
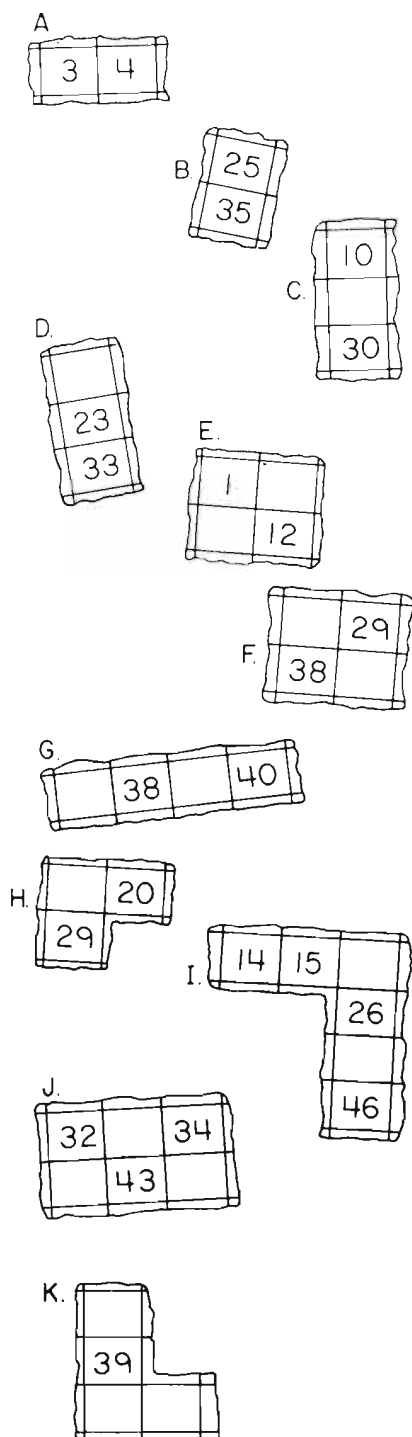
Help at home? Keep up the dominoes--still excellent for strengthening these operations. Keep up the praise!

Supplying the missing numbers in a set of one hundred comes next. Your child will begin to see the number system as existing in sets of tens. Watch for the next few papers, and you will easily see what we are getting at. Can you think of a game to help teach this idea that is fun to do?

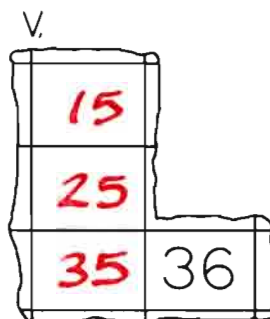
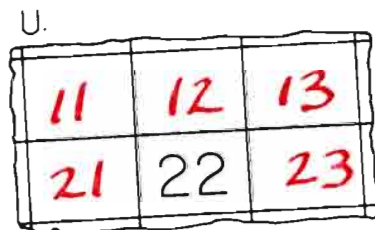
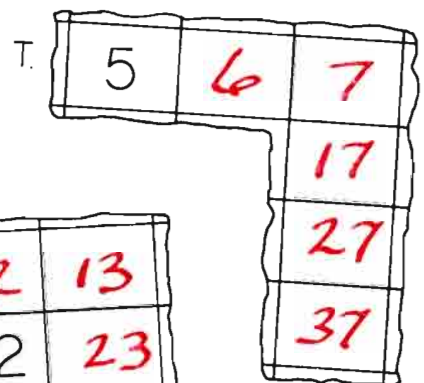
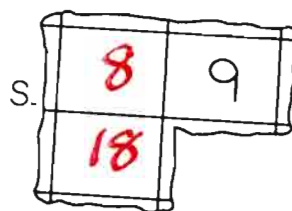
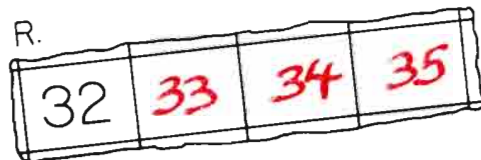
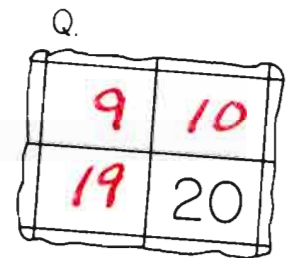
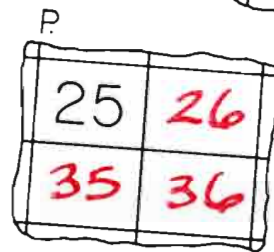
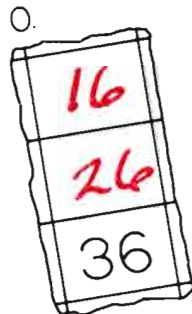
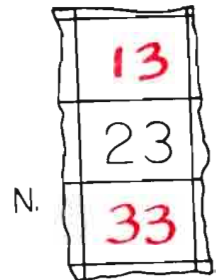
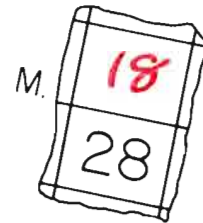
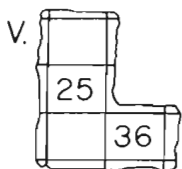
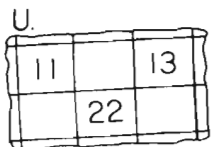
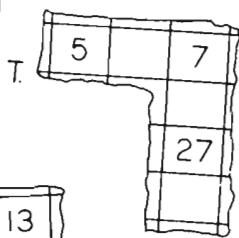
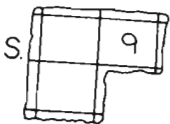
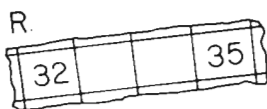
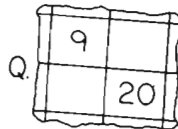
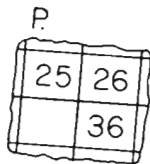
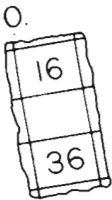
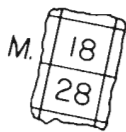
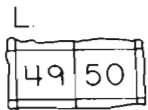
Sincerely,

Many teachers have achieved remarkable results with this activity by merely having a 100's chart permanently on display in the room. Another dimension for fun is to cut a 100's chart into pieces for assembly by the children as a puzzle. Page 47 of Developing Insights is a convenient page for copying.

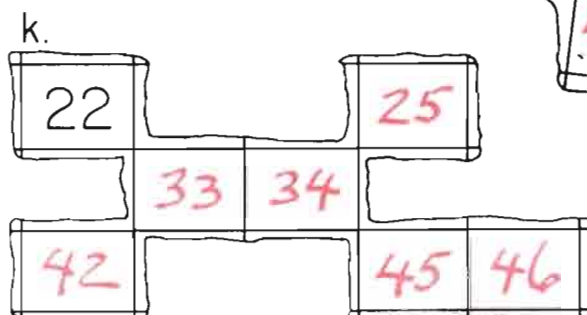
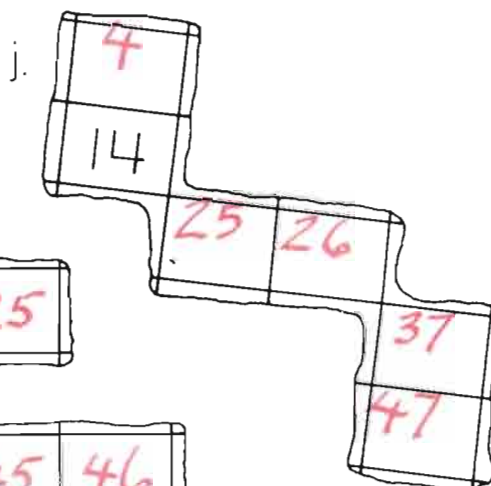
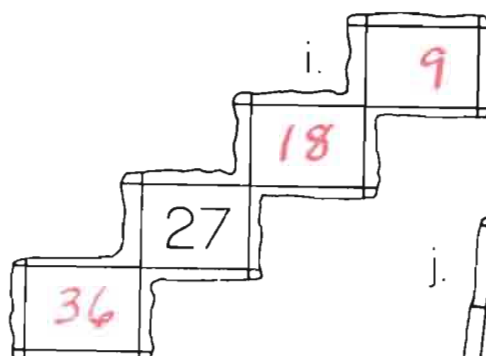
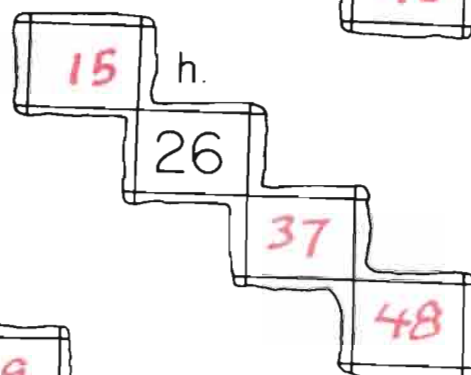
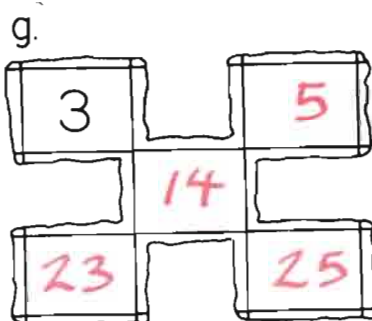
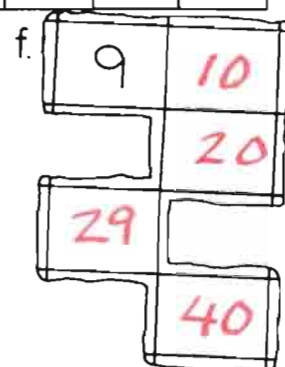
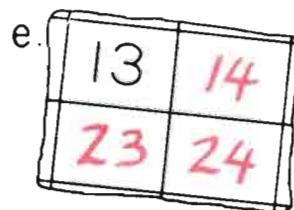
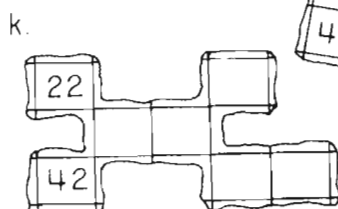
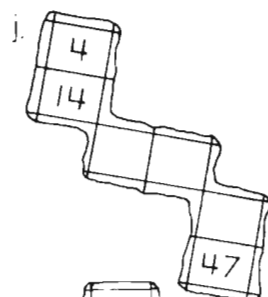
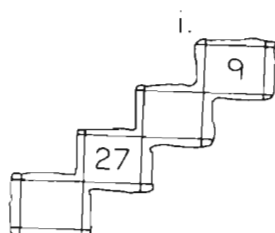
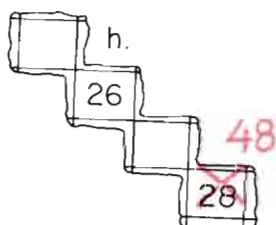
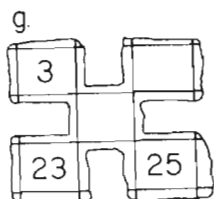
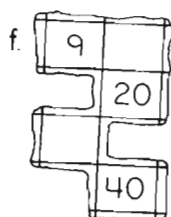
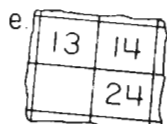
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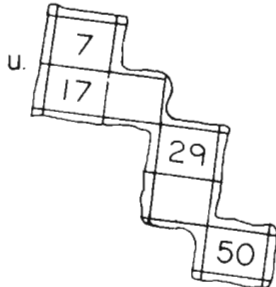
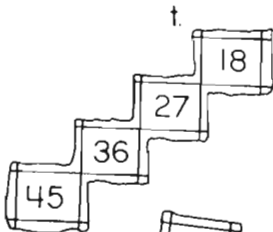
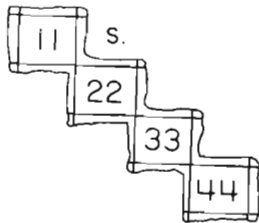
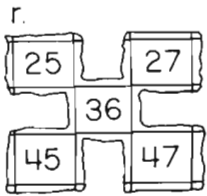
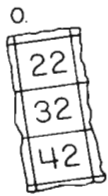


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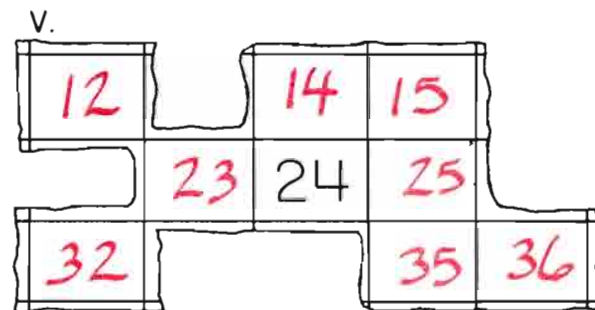
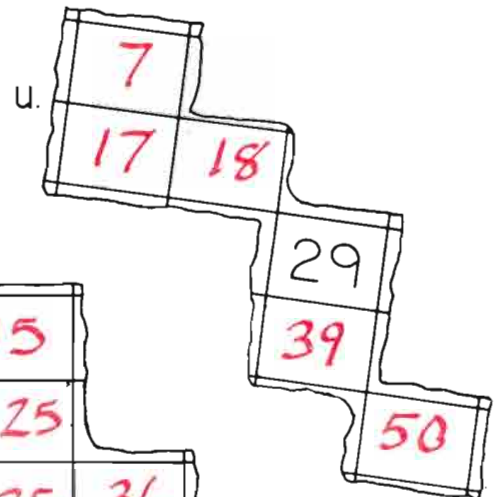
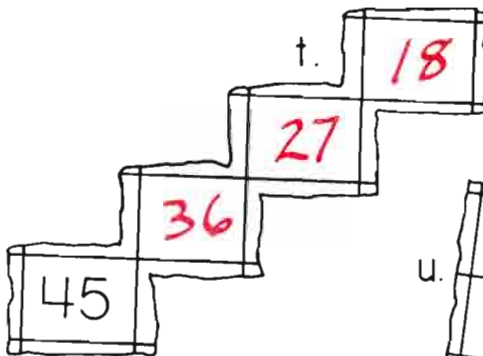
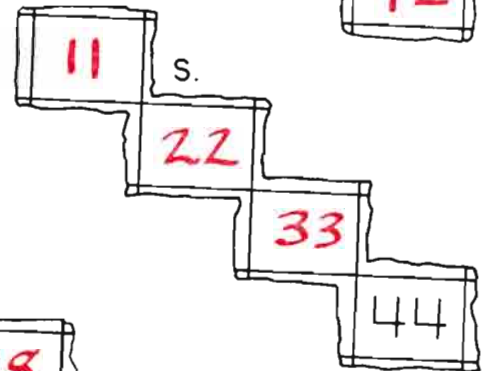
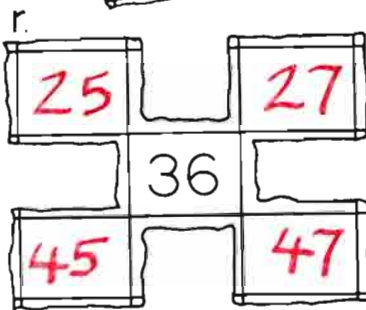
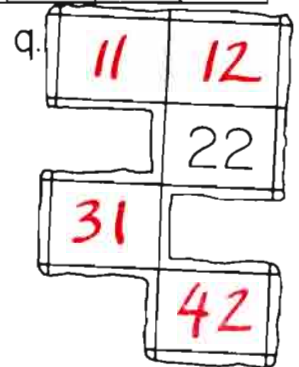
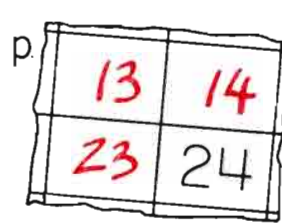
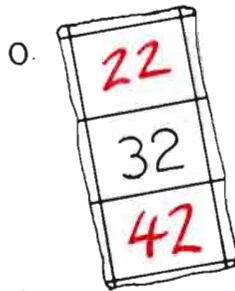


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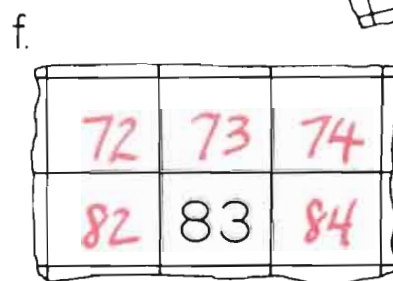
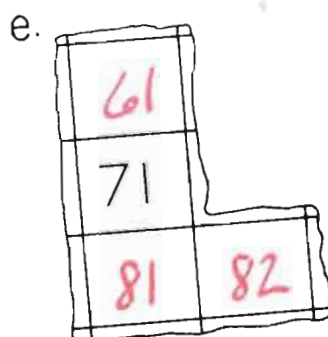
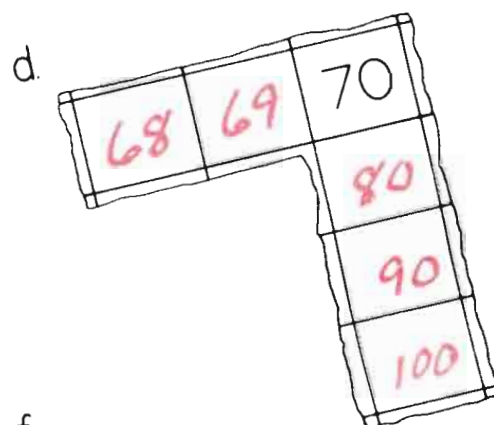
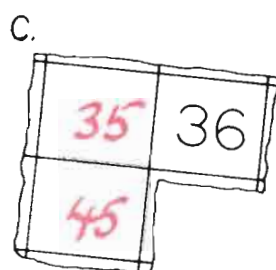
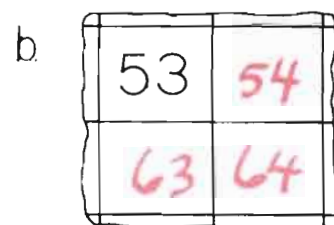
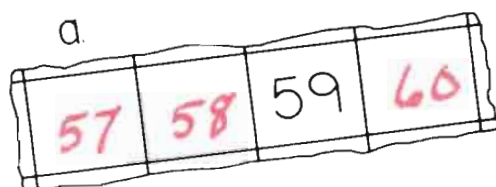
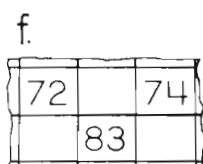
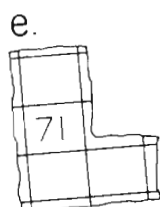
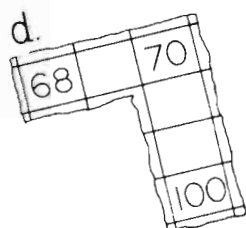
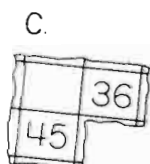
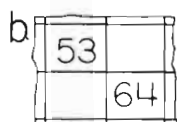
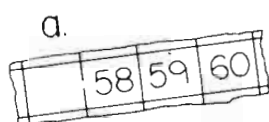




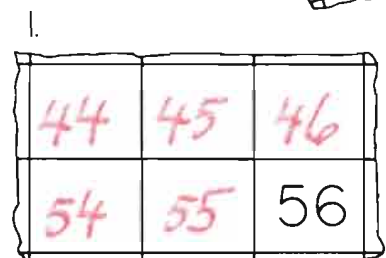
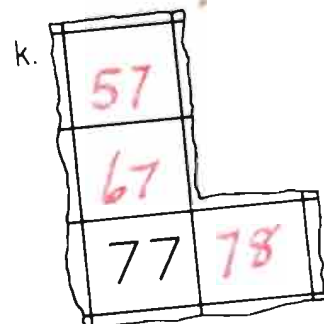
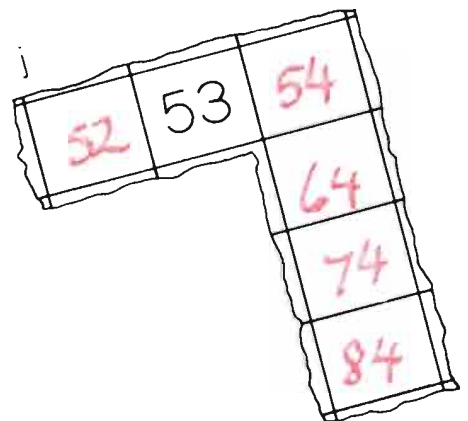
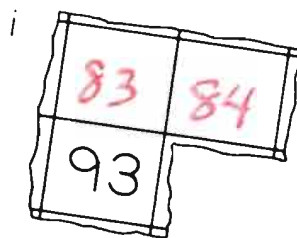
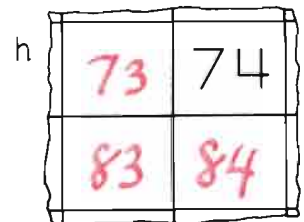
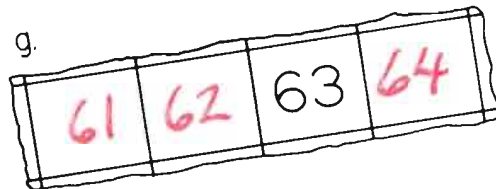
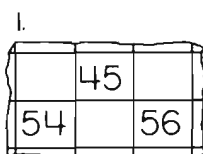
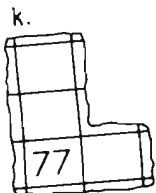
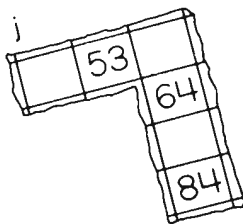
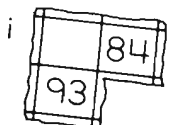
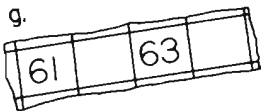
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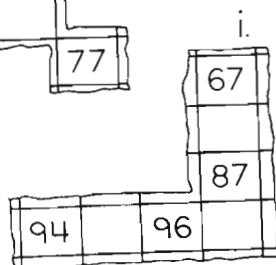
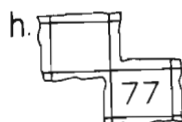
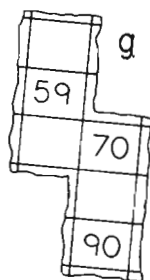
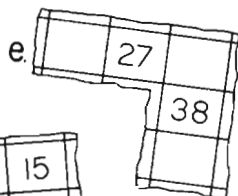
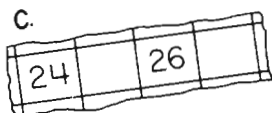
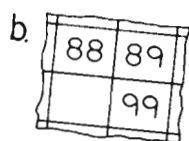
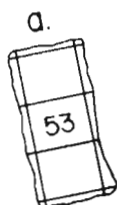


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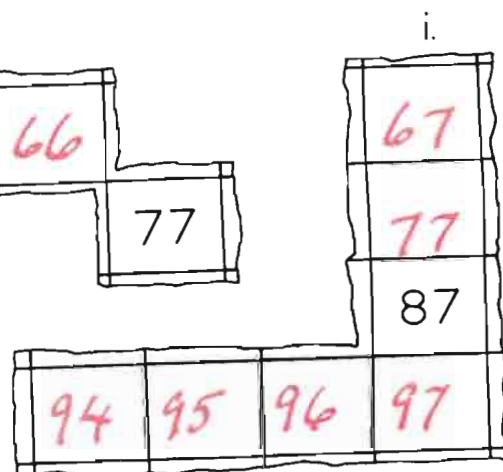
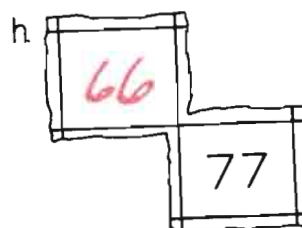
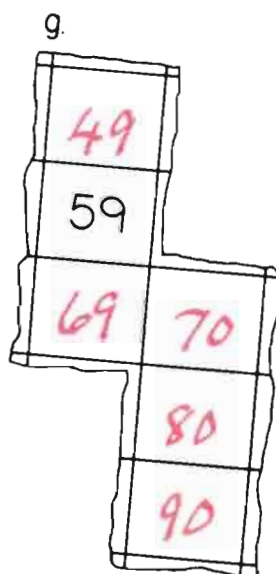
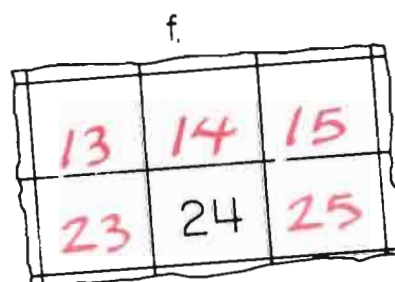
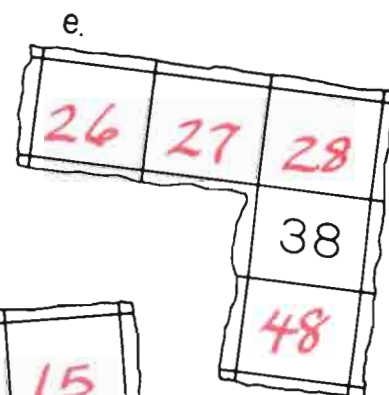
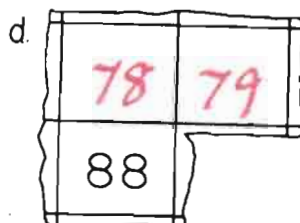
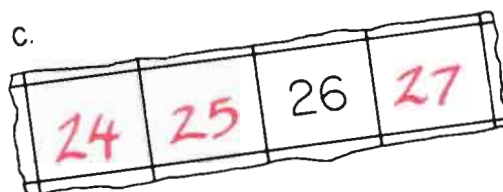
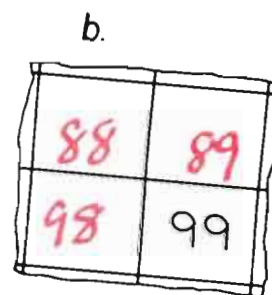
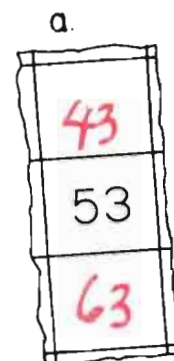


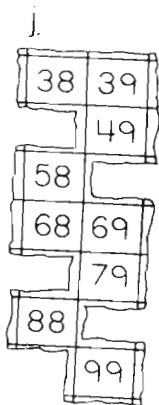
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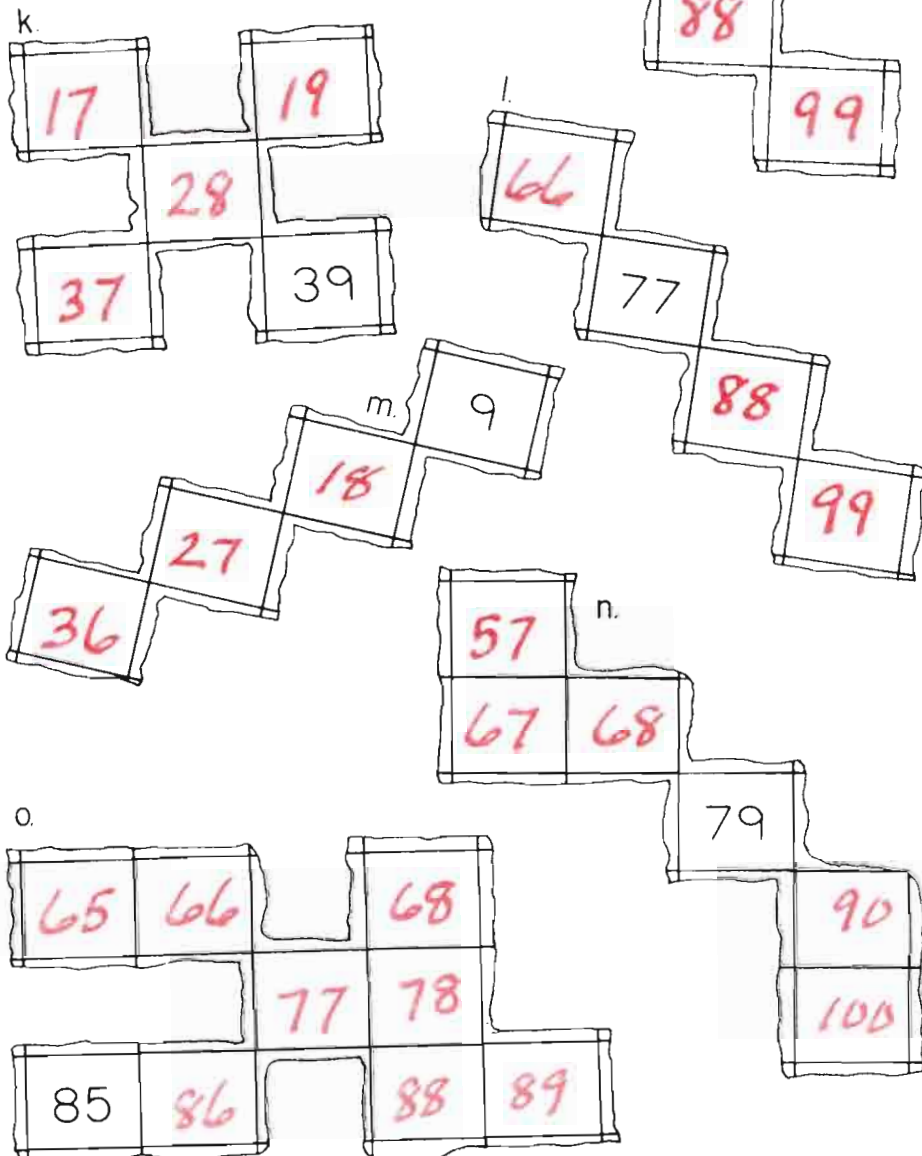
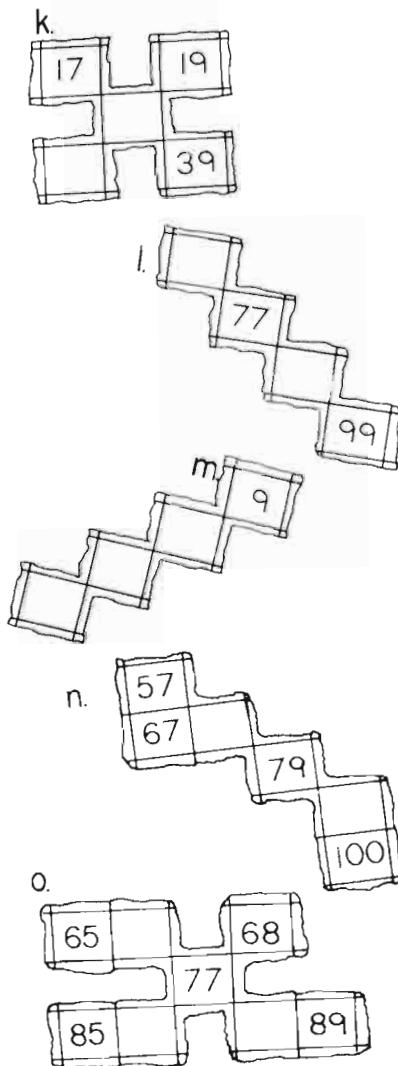
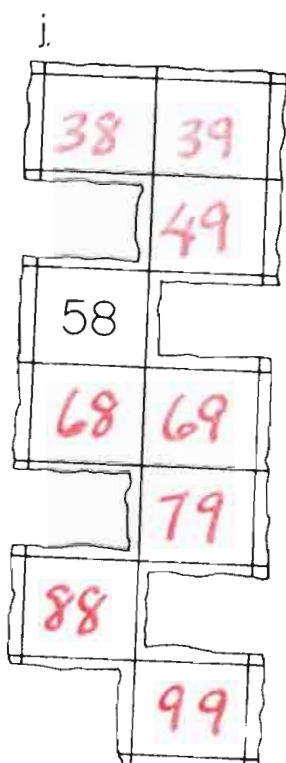


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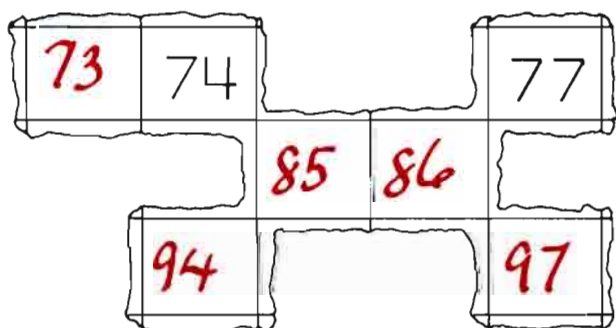
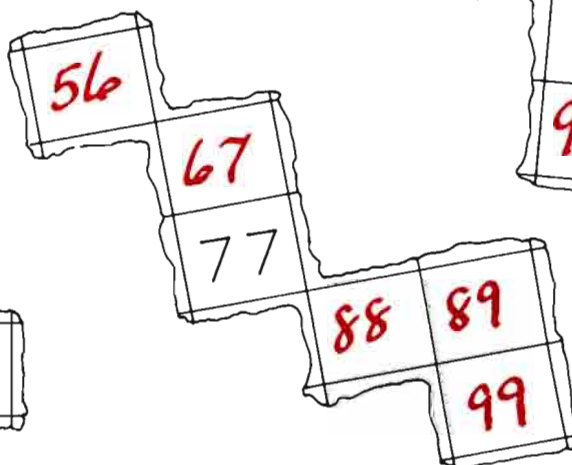
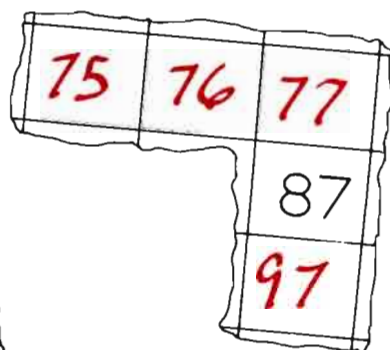
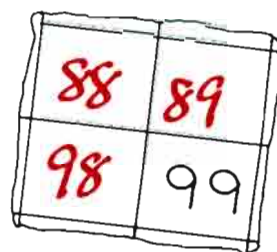
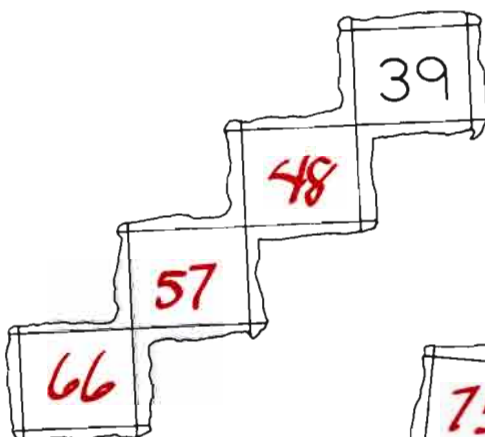
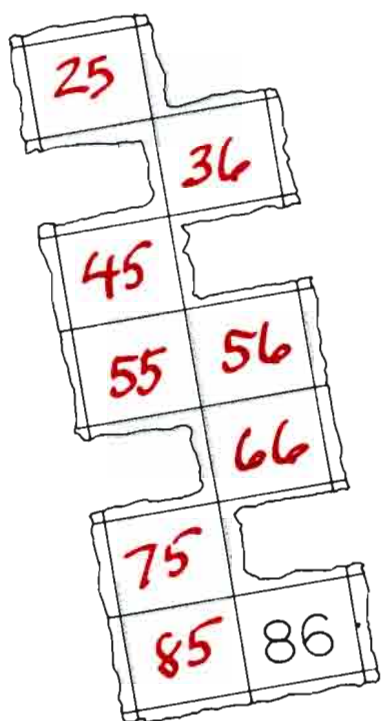
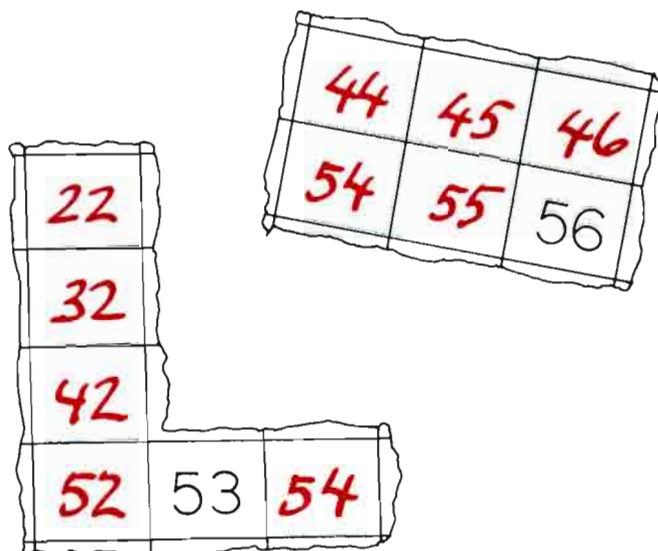




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81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



How do you feel?
¿Cómo se siente?

Dear Parents,

Your child is now able to do something we've seen much older children struggle with--supply the missing numbers in a set of one hundred. It is one thing to count to one hundred as in playing hide-and-seek; it is quite another to see what is missing in a written array! Congratulations are in order--this is a real accomplishment.

Next is division, the fast way to subtract. It will not be long now until your child knows how to do the four basic mathematical operations. Of course, children can do them all before coming to school, but now your child is able to write down what is found out.

We're sure you have already sensed that you can help further the sense of understanding by giving your child division chores around the house. How many cookies will each of three children get if there are a half-dozen?

Sincerely,

--	--	--	--

Please start with as many counters as you like, such as 11, and

$$\boxed{} \div \boxed{} = \boxed{}$$

keep a note of that by writing '11' in the small box on the left; decide how many frames to use, and report that choice in the small

--	--	--	--

box after the ' ', such as:

$$\boxed{11} \div \boxed{3} = \boxed{}$$

"Please distribute the 11 counters in the three frames, ending with the same number of counters in each frame:"

•	•	•	•	•	•	•	•	•	•
---	---	---	---	---	---	---	---	---	---

--	--	--	--

$$\boxed{} \div \boxed{} = \boxed{}$$

...if one tries to put 4 in each frame he is 1 short; if he puts 3 in each frame 2 are left over.

This outcome can be reported:

$$\boxed{11} \div \boxed{3} = \boxed{3}^2$$

--	--	--	--

$$\boxed{} \div \boxed{} = \boxed{}$$

---"three in each frame and two left over."

--	--	--	--

$$\boxed{} \div \boxed{} = \boxed{}$$

--	--	--	--

$$\boxed{} \div \boxed{} = \boxed{}$$

--	--	--	--

$$\boxed{} \div \boxed{} = \boxed{}$$

--	--	--	--

$$\boxed{} \div \boxed{} = \boxed{}$$

I.

2

I.

4

÷

2

=

2

Here the number of
counters to begin with,
and the number of frames
to use, are given.

J.

4

J.

12

÷

3

=

4

K.

K.

15

÷

3

=

5

L.

4

L.

16

÷

4

=

4

M.

M.

$$\boxed{4} \div \boxed{4} = \boxed{1}$$

N.

N.

$$\boxed{8} \div \boxed{2} = \boxed{4}$$

O.

O.

$$\boxed{3} \div \boxed{1} = \boxed{3}$$

P.

P.

$$\boxed{20} \div \boxed{4} = \boxed{5}$$

A. $\boxed{4}$

B. $\boxed{5}$

C. $\boxed{}$

D. $\boxed{3}$

E. $\boxed{}$

F. $\boxed{}$

--	--	--	--

A. $\boxed{8} \div \boxed{2} = \boxed{4}$

B. $\boxed{10} \div \boxed{2} = \boxed{5}$

C. $\boxed{12} \div \boxed{2} = \boxed{6}$

--	--	--	--

D. $\boxed{9} \div \boxed{3} = \boxed{3}$

E. $\boxed{15} \div \boxed{3} = \boxed{5}$

F. $\boxed{12} \div \boxed{3} = \boxed{4}$

G. $\boxed{6}$

H. $\boxed{4}$

I. $\boxed{}$

--	--	--	--

G. $\boxed{12} \div \boxed{2} = \boxed{6}$

H. $\boxed{12} \div \boxed{3} = \boxed{4}$

I. $\boxed{12} \div \boxed{4} = \boxed{3}$

--	--	--	--

J. $\boxed{}$

K. $\boxed{3}$

L. $\boxed{}$

J. $\boxed{4} \div \boxed{2} = \boxed{2}$

K. $\boxed{9} \div \boxed{3} = \boxed{3}$

L. $\boxed{16} \div \boxed{4} = \boxed{4}$

M. $\boxed{5}$

M. $\boxed{10} \div \boxed{2} = \boxed{5}$

N. $\boxed{}$

N. $\boxed{10} \div \boxed{5} = \boxed{2}$

O. $\boxed{20}$

O. $\boxed{20} \div \boxed{1} = \boxed{20}$

P. $\boxed{}$

P. $\boxed{20} \div \boxed{2} = \boxed{10}$

Q. $\boxed{5}$

Q. $\boxed{20} \div \boxed{4} = \boxed{5}$

R. $\boxed{}$

R. $\boxed{20} \div \boxed{5} = \boxed{4}$

S. $\boxed{2}$

S. $\boxed{10} \div \boxed{5} = \boxed{2}$

T. $\boxed{5}$

T. $\boxed{15} \div \boxed{3} = \boxed{5}$

U. $\boxed{}$

U. $\boxed{8} \div \boxed{2} = \boxed{4}$

V. $\boxed{\cancel{6}} \quad \boxed{3}$

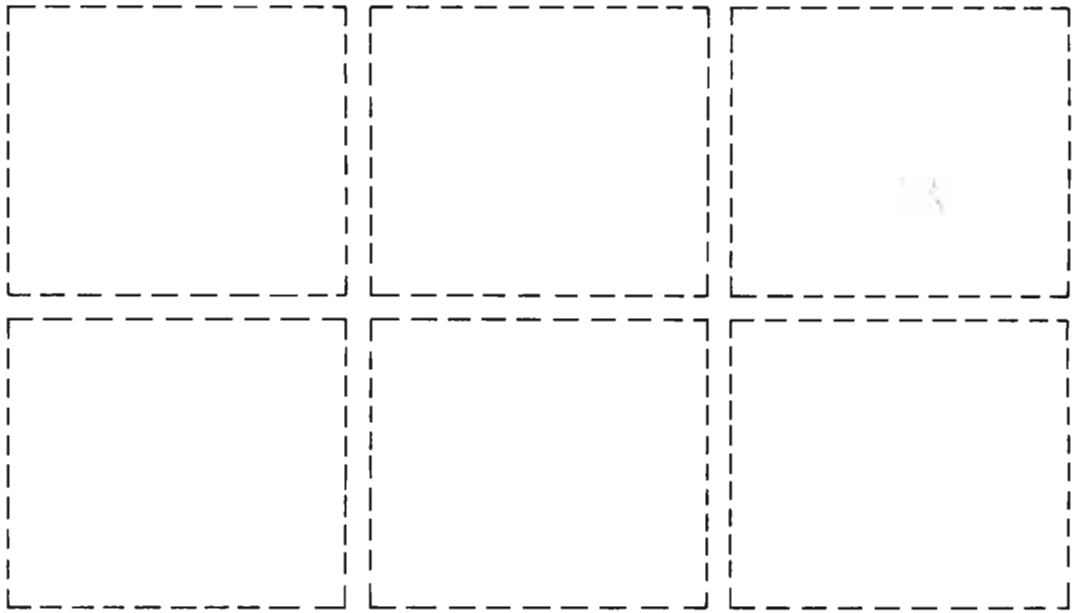
V. $\boxed{9} \div \boxed{3} = \boxed{3}$

W. $\boxed{}$

W. $\boxed{12} \div \boxed{4} = \boxed{3}$

X. $\boxed{}$

X. $\boxed{24} \div \boxed{6} = \boxed{4}$



$$\boxed{18} \div \boxed{2} = \boxed{9}$$

$$\boxed{18} \div \boxed{3} = \boxed{6}$$

$$\boxed{18} \div \boxed{6} = \boxed{3}$$

$$\boxed{24} \div \boxed{3} = \boxed{8}$$

$$\boxed{24} \div \boxed{4} = \boxed{6}$$

$$\boxed{24} \div \boxed{6} = \boxed{4}$$

How do you feel?
¿Cómo se siente?



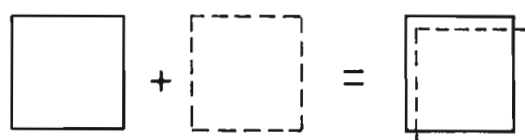
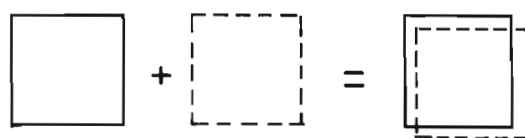
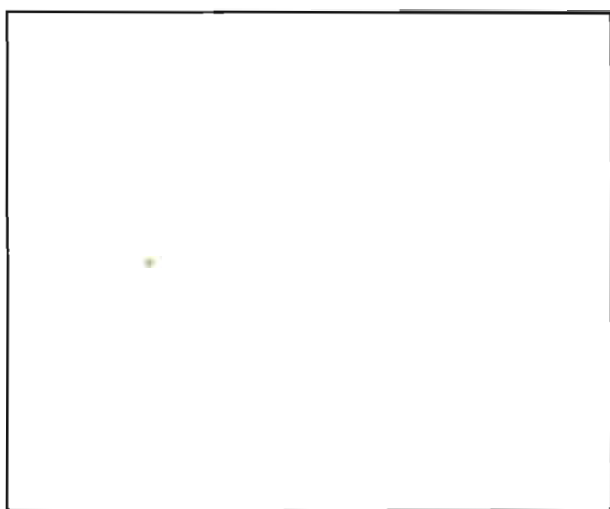
Dear Parents,

Now tell us the truth--did you know how to divide when you were six or seven? We didn't either. It's obvious from the back of this page that your child can divide (we didn't teach this--the real world did some time ago!) What is new and interesting is not that your child knows how to divide real objects into groups but that there is a demonstrated understanding and ability to record the results. So far we are only dealing with even numbers that don't have any "left over". We're sure your child knows about dividing with remainders--we just haven't taught how to record this unpleasant fact. If you've ever had nine children and seventeen cookies, you know exactly what we mean!

At any rate, your child now knows how to divide groups of objects and record the results--as long as there are no remainders. Now, since you know we couldn't do this at the same age(at least, we doubt it) don't you think your child deserves some very special kind of recognition and congratulations?

We do!

Sincerely,



$$\underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$$

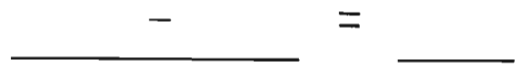
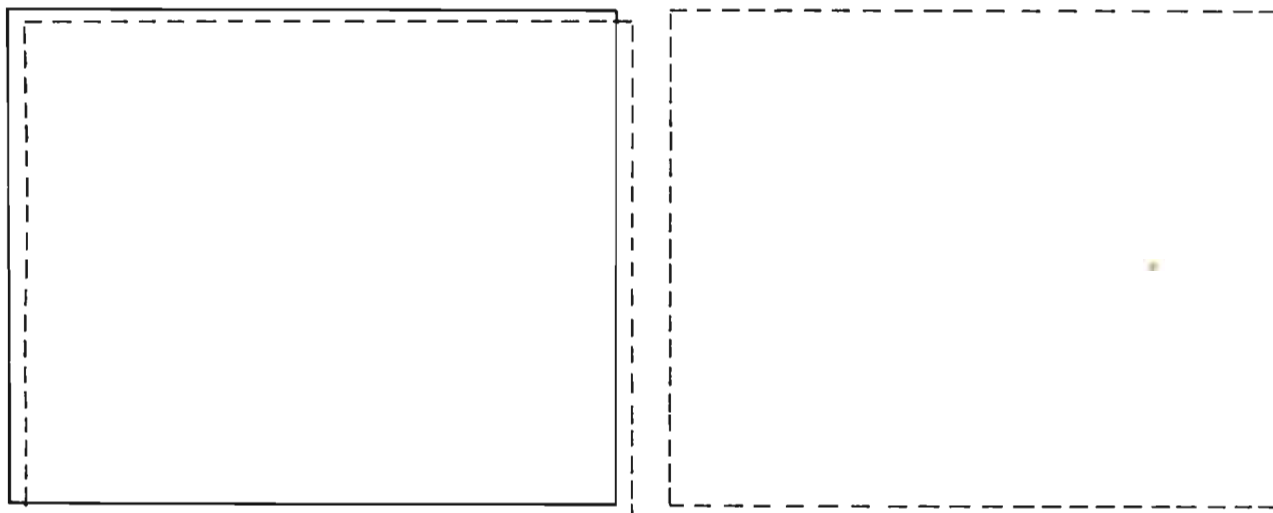
$$\underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$$

$$\underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$$

$$\underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$$

$$\underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$$

$$\underline{\quad\quad} + \underline{\quad\quad} = \underline{\quad\quad}$$



The remainder of this book is a review of material previously introduced. Counters, beansticks, rods, etc. might be encouraged if needed.

A. $\boxed{15}$

B. $\boxed{16}$

C. _____

D. 15

E. _____

F. ~~12~~ 14

G. _____

H. _____

A. $\boxed{9} + \boxed{6} = \boxed{15}$

B. $\boxed{8} + \boxed{8} = \boxed{16}$

C. $5 + 9 = 14$

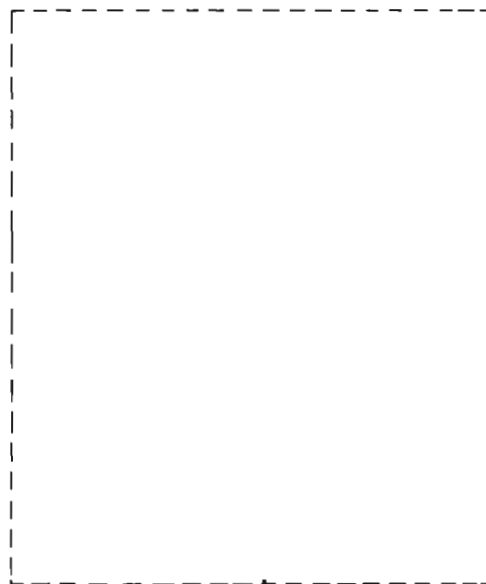
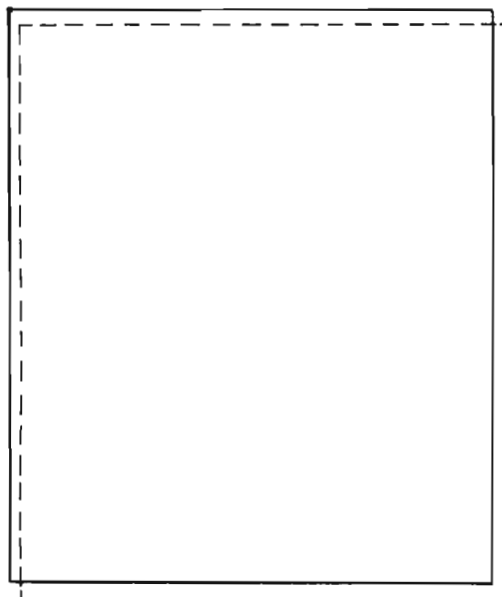
D. $7 + 8 = 15$

E. $8 + 9 = 17$

F. $6 + 8 = 14$

G. $9 + 7 = 16$

H. $9 + 9 = 18$



A. $\boxed{9}$

B. $\boxed{8}$

C. $\underline{\hspace{2cm}}$

D. $\underline{8}$

E. $\underline{\hspace{2cm}}$

F. $\underline{\hspace{2cm}}$

G. $\underline{\hspace{2cm}}$

H. $\underline{9}$

A. $\boxed{15} - \boxed{6} = \boxed{9}$

B. $\boxed{16} - \boxed{8} = \boxed{8}$

C. $14 - 5 = 9$

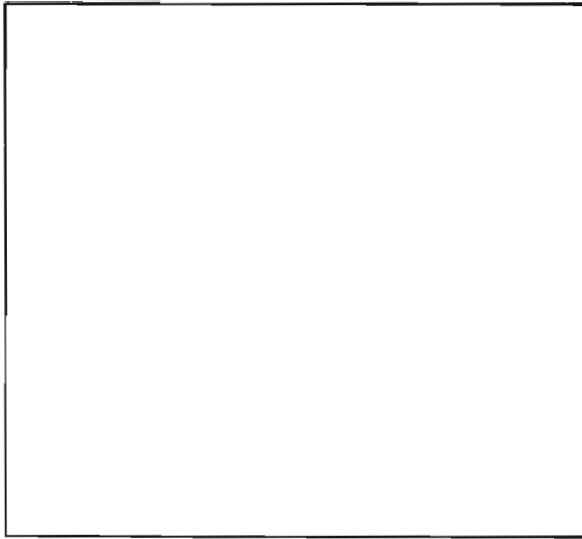
D. $15 - 7 = 8$

E. $17 - 9 = 8$

F. $14 - 8 = 6$

G. $16 - 7 = 9$

H. $18 - 9 = 9$



$$\underline{8 + 9 = 17}$$

$$\underline{6 + 8 = 14}$$

$$\underline{9 + 7 = 16}$$

$$\underline{9 + 9 = 18}$$

$$\underline{18 + 16 = 34}$$

$$\underline{28 + 10 = 38}$$

$$\underline{14 + 16 = 30}$$

$$\underline{15 - 7 = 8}$$

$$\underline{17 - 9 = 8}$$

$$\underline{14 - 8 = 6}$$

$$\underline{16 - 7 = 9}$$

$$\underline{28 - 10 = 18}$$

$$\underline{34 - 16 = 18}$$

$$\underline{38 - 10 = 28}$$

How do you feel?



¿Cómo se siente?

Dear Parents,

Well, here we are, almost to the end of the A-Level part of our math program. The check-up shows (on the reverse side of this sheet) that, indeed, your youngster can add and subtract quite large numbers and record the results with an extremely high degree of accuracy. Counters may still be used, but we know that there is understanding, there is success, and there is confidence. Unless we've made some serious mistakes, your child should really feel good about arithmetic.

The last unit will give practice in multiplying and dividing. Remember that these operations traditionally are not taught until much later--often not until the child is eight or nine. You may be rightfully proud when your child can show you how to do these things and record the results! Be even more delighted if you sense an understanding of the relationship between addition and multiplication and between subtraction and division--the "short-cut" idea. Look also for an understanding of the relationship between addition and subtraction--putting together and taking away--and the same for multiplication and division. Don't be at all disturbed if you can't detect these understandings. They come slowly and can't be forced.

Again, we can't express our thanks for your support at home. That insures the success of your child!

Sincerely,

$$\square \times \square = \square$$

$$\square \times \square = \square$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\boxed{} \div \boxed{} = \boxed{}$$

$$\boxed{} \div \boxed{} = \boxed{}$$

$$\underline{} \div \underline{} = \underline{}$$

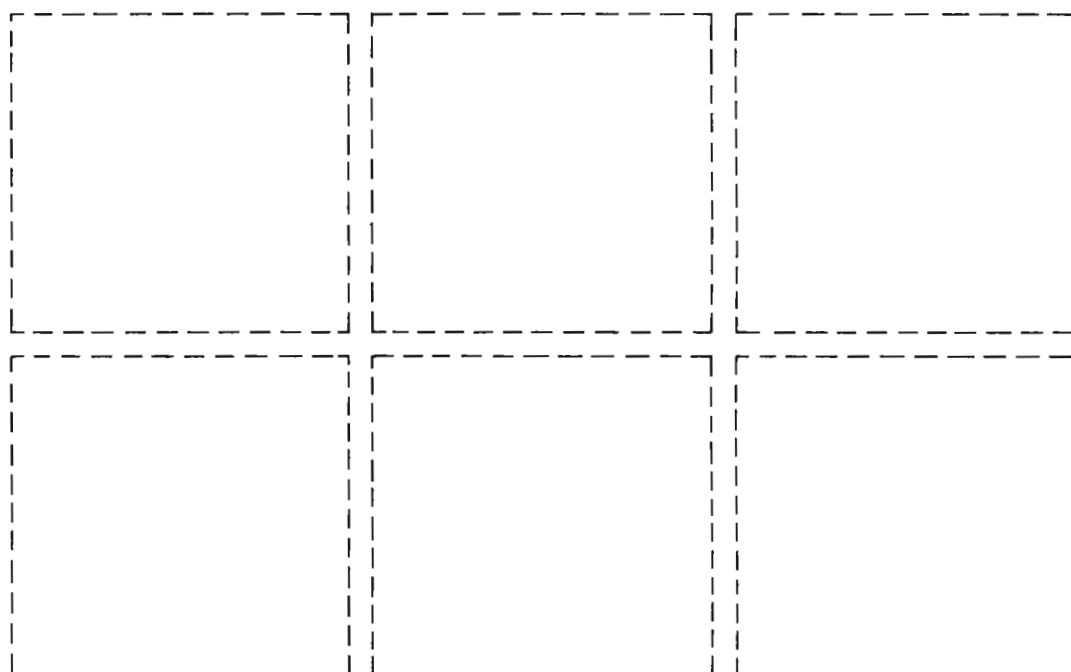
$$\underline{} \div \underline{} = \underline{}$$

$$\underline{} \div \underline{} = \underline{}$$

$$\underline{} \div \underline{} = \underline{}$$

$$\underline{} \div \underline{} = \underline{}$$

$$\underline{} \div \underline{} = \underline{}$$



A. $\boxed{10}$

B. $\boxed{}$

C. $\underline{\hspace{2cm}}$

D. $\underline{12}$

E. $\underline{16}$

F. $\underline{\hspace{2cm}}$

G. $\underline{20}$

H. $\underline{\hspace{2cm}}$

A. $\boxed{5} \times \boxed{2} = \boxed{10}$

B. $\boxed{1} \times \boxed{3} = \boxed{3}$

C. $\underline{3} \times \underline{3} = \underline{9}$

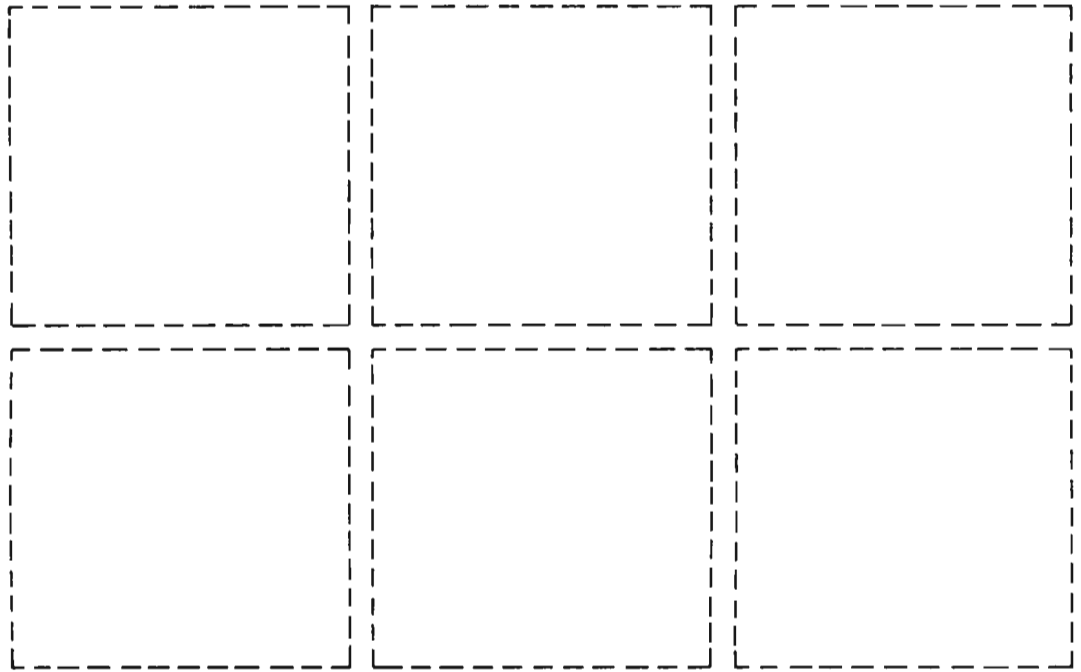
D. $\underline{2} \times \underline{6} = \underline{12}$

E. $\underline{4} \times \underline{4} = \underline{16}$

F. $\underline{3} \times \underline{2} = \underline{6}$

G. $\underline{4} \times \underline{5} = \underline{20}$

H. $\underline{3} \times \underline{6} = \underline{18}$



i. 5

i. $\boxed{10} \div \boxed{2} = \boxed{5}$

j. 1

j. $\boxed{3} \div \boxed{3} = \boxed{1}$

k.

k. $9 \div 3 = 3$

l.

l. $12 \div 6 = 2$

m. 4

m. $16 \div 4 = 4$

n. 3

n. $6 \div 2 = 3$

o.

o. $20 \div 5 = 4$

p. 3

p. $18 \div 6 = 3$

$$\underline{3 \times 2 = 6}$$

$$\underline{9 \div 3 = 3}$$

$$\underline{4 \times 5 = 20}$$

$$\underline{12 \div 6 = 2}$$

$$\underline{3 \times 4 = 12}$$

$$\underline{16 \div 4 = 4}$$

$$\underline{5 \times 5 = 25}$$

$$\underline{6 \div 2 = 3}$$

$$\underline{4 \times 4 = 16}$$

$$\underline{20 \div 5 = 4}$$

$$\underline{4 \times 6 = 24}$$

$$\underline{18 \div 6 = 3}$$

$$\underline{5 \times 3 = 15}$$

$$\underline{36 \div 6 = 6}$$

How do you feel?



¿Cómo se siente?

Dear Parents,

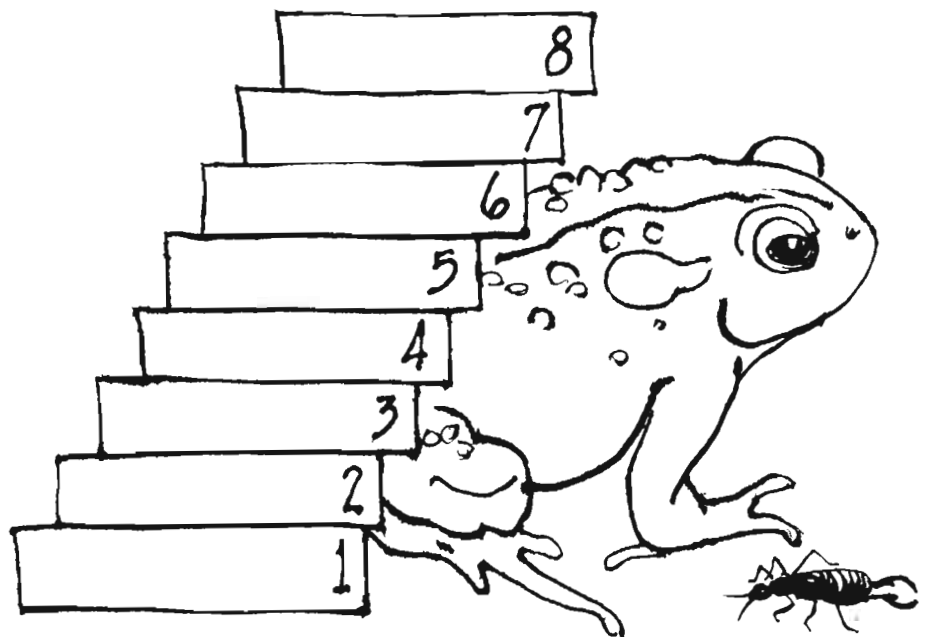
It is with a great deal of pleasure that we send you this last letter with proof on the back of your young child's success in dealing with the recording of multiplication and division, with counters. This is not done in the usual math program. It only demonstrates how much children already know, but never knew how to write down.

This is the end of the A-Level Computation program. To review quickly, your child now knows: how to record all four basic operations with numbers; how to write all of the numbers to one hundred; hopefully how to count on--involving an understanding of counting by tens; and, is beginning to have practice in understanding the place value system of numbers.

This is a great deal for your young one to have dealt with this year. Your careful help and support has meant a great deal. From now on, and for quite a while, there will be nothing "brand new" to learn. We will just help your child to strengthen and extend the learnings already mastered.

We are very proud of your child. Our hope is to keep the process of learning about numbers a fun, exciting, and happy one. There is no reason for it to be otherwise.

Sincerely,





this book
belongs to

este libro
es de