

AFR
370.712
E24
v.1

MARY TWO

PN-AAU-069
42781

~~X~~
VOLUME **1**



PUPIL BOOK

MATHEMATICS

Prepared
at the
Entebbe Mathematics Workshops

PRELIMINARY EDITION

Educational Services Incorporated
Watertown, Massachusetts, U.S.A.

ENTEBBE MATHEMATICS SERIES

Primary I -- Revised Preliminary Edition
Pupil Book: Two volumes
Teachers' Guide: Two volumes

Primary II -- Preliminary Edition
Pupil Book: Two volumes
Teachers' Guide: Two volumes

Entebbe Mathematics Teachers' Handbook, Primary I-III, Preliminary Edition

Secondary I -- Preliminary Edition
Student Text: Three volumes
Teachers' Guide: Three volumes

Secondary II -- Preliminary Edition
Student Text: Three volumes
Teachers' Guide: Three volumes

Basic Concepts of Mathematics -- Preliminary Edition
An Introductory Text for Teachers

NOTE

This book was written at a study and writing workshop held during the summer of 1963 at Entebbe, Uganda. More than fifty mathematicians and mathematics teachers from Africa, the United Kingdom, and the United States attended the Workshop.

The book was edited and produced with the utmost speed so that it might be tried out in African primary schools during 1964. Therefore, there may be errors in editing and production. The African Education Program hopes that teachers and pupils who use this book will appreciate the circumstances under which it was produced.

PUPIL BOOK

VOLUME ONE

MATHEMATICS PRIMARY TWO

PRELIMINARY EDITION

Prepared at the
Entebbe Mathematics Workshops

African Education Program
Educational Services Incorporated
Watertown 72, Mass., U. S. A.

FIRST PRINTING

January, 1964

Copyright © 1964 by Educational Services Incorporated
Printed in the United States of America

ACKNOWLEDGEMENTS

This Teachers' Guide and the Pupil Book for Primary Two Mathematics were prepared at a workshop during the summer of 1963 at Entebbe, Uganda. The Entebbe Mathematics Workshop of 1963 was a part of a curriculum programme of the African Education Program of Educational Services Incorporated.

Funds for the programme are being provided by the United States Government through the International Cooperation Administration, the Agency for International Development, and the Department of State; by the Ford Foundation; and by the Louis and Pauline Cowan Foundation, Inc.

The Entebbe Mathematics Workshops were directed by Professor Walter Prenowitz of Brooklyn College, Brooklyn, N. Y. and by Professor W. T. Martin of Massachusetts Institute of Technology, Cambridge, Massachusetts.

The books for teachers and pupils of Primary Two Mathematics were written at Entebbe by the following:

Chairman: Professor Clarence Hardgrove (1962, 1963)
Northern Illinois University
De Kalb, Illinois, U. S. A.

Editors: Professor Clarence Hardgrove
Professor Vincent Haag (1963)
Franklin and Marshall College
Lancaster, Pennsylvania, U. S. A.
Professor Shirley Hill (1962, 1963)
University of Missouri
Kansas City, Missouri, U. S. A.

Miss Lucy Addy (1962, 1963)
Achimota School
Achimota, Ghana

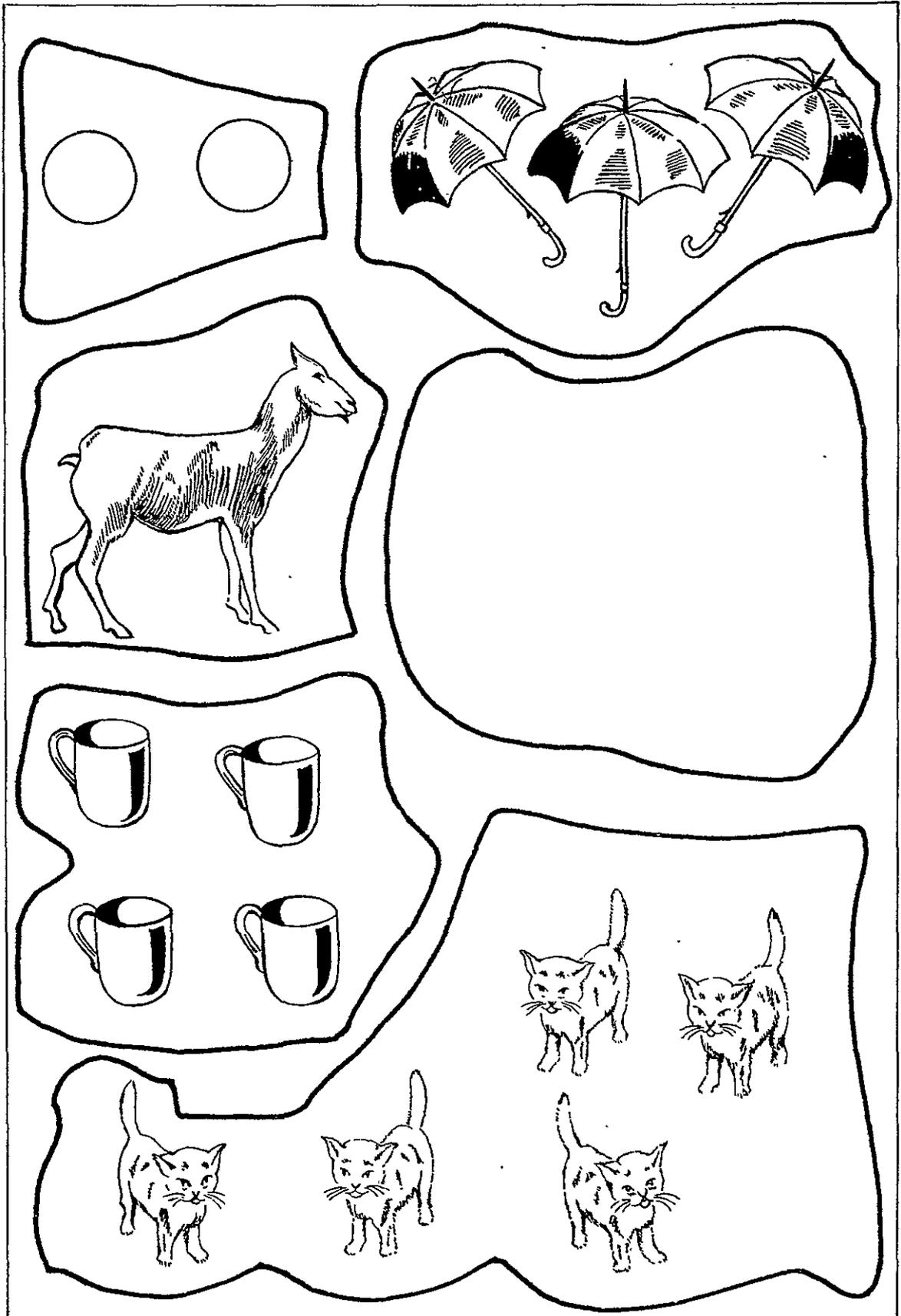
Mr. Baranaba Avinyia (1963)
Arua Teacher Training College
Arua, Uganda

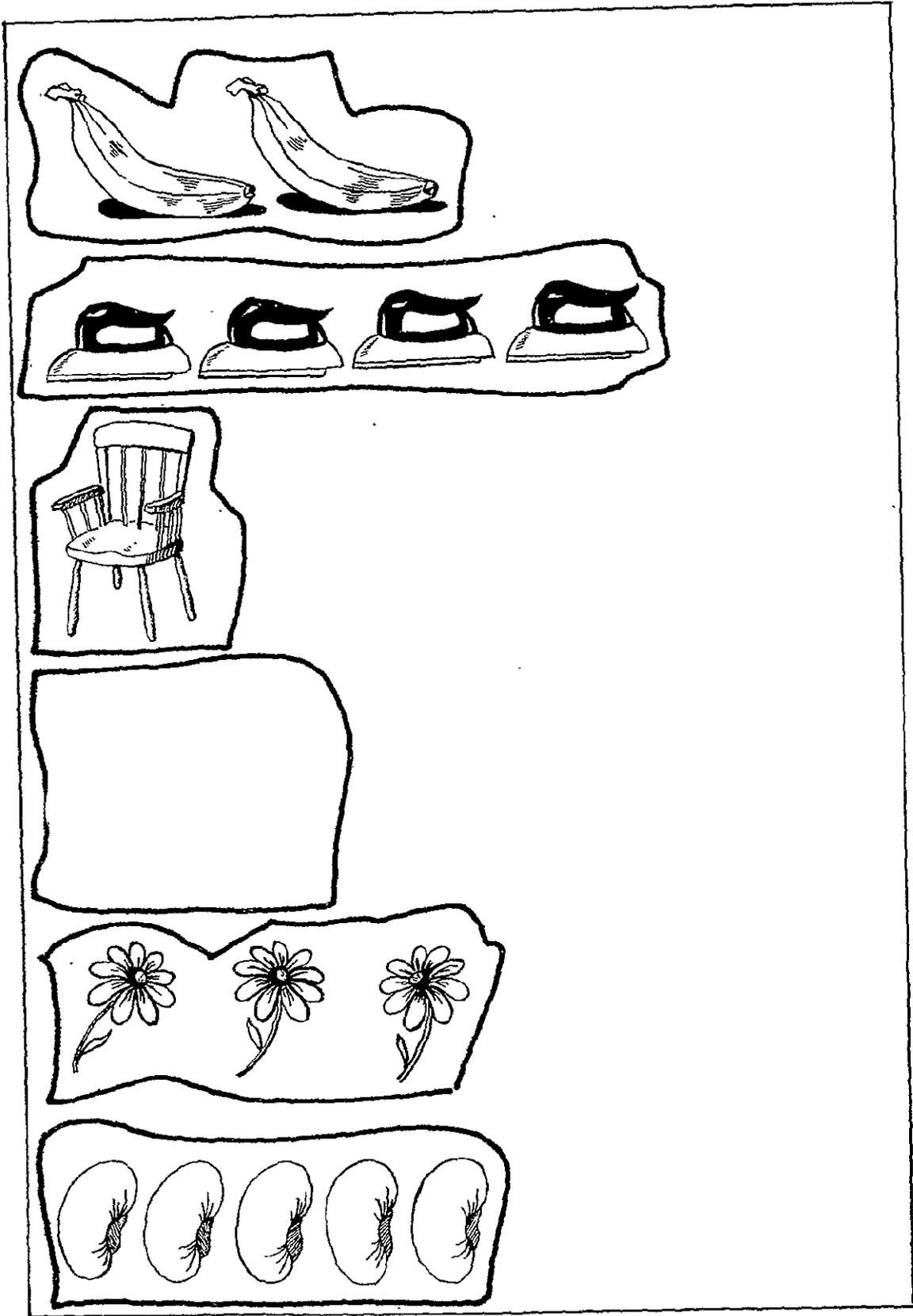
- Mr. Muhamed Bashraheil (1963)
Bububu School
Zanzibar
- Mr. D. A. Fakoya (1963)
Federal Ministry of Education
Lagos, Nigeria
- Mrs. Margaret Greene (1963)
Annie Walsh Memorial School
Freetown, Sierra Leone
- Miss Helene Junius (1963)
Monrovia Demonstration School
Monrovia, Liberia
- Mr. Frank Kazembe (1963)
Ministry of Education
Blantyre, Nyasaland
- Mr. Paul Merrick (1963)
Elementary Science Study
Educational Services Incorporated
Watertown, Massachusetts, U. S. A.
- Mr. Morton H. Mughogho (1963)
Ministry of Education
Lilongwe, Nyasaland
- Mr. Raphael Mwajombe (1963)
Peramiho Teacher Training College
Peramiho, Tanganyika
- Mr. George T. Obodai (1963)
King Tackie Memorial Primary School
Accra, Ghana
- Mr. Alfred C. Oblitey (1963)
Institute of Education, University of Ghana
Accra, Ghana
- Professor B. J. Pettis (1963)
University of North Carolina
Chapel Hill, North Carolina, U. S. A.
- Mr. E. L. Thomas (1963)
Charles Lwanga Teacher Training College
Chisekesi, Northern Rhodesia

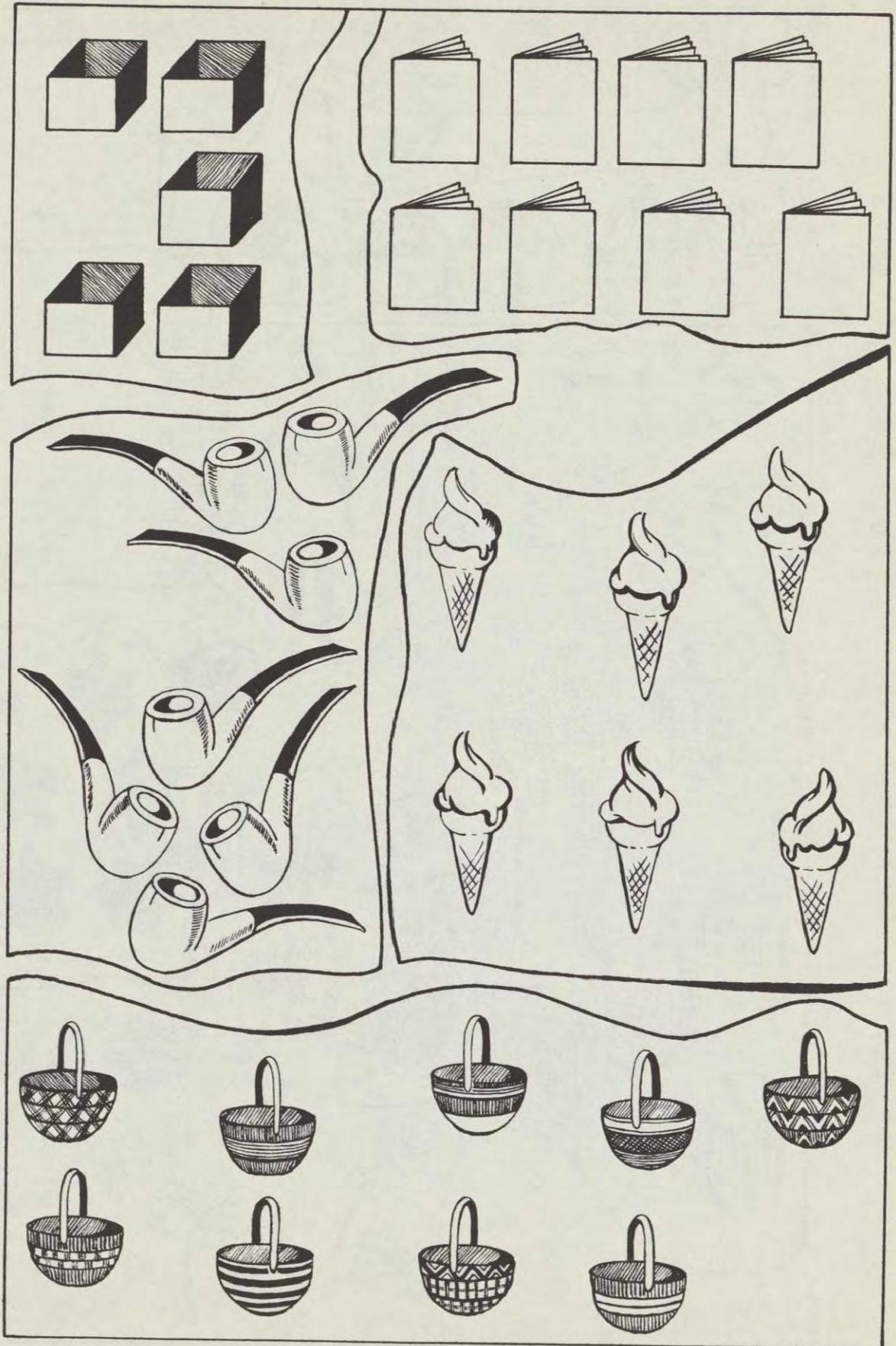
Dr. Onyerisara Ukeje (1963)
University of Nigeria
Nsukka, Nigeria

Mr. Robert Walsh (1963)
UNESCO, Institute of Education, Makerere College
Kampala, Uganda

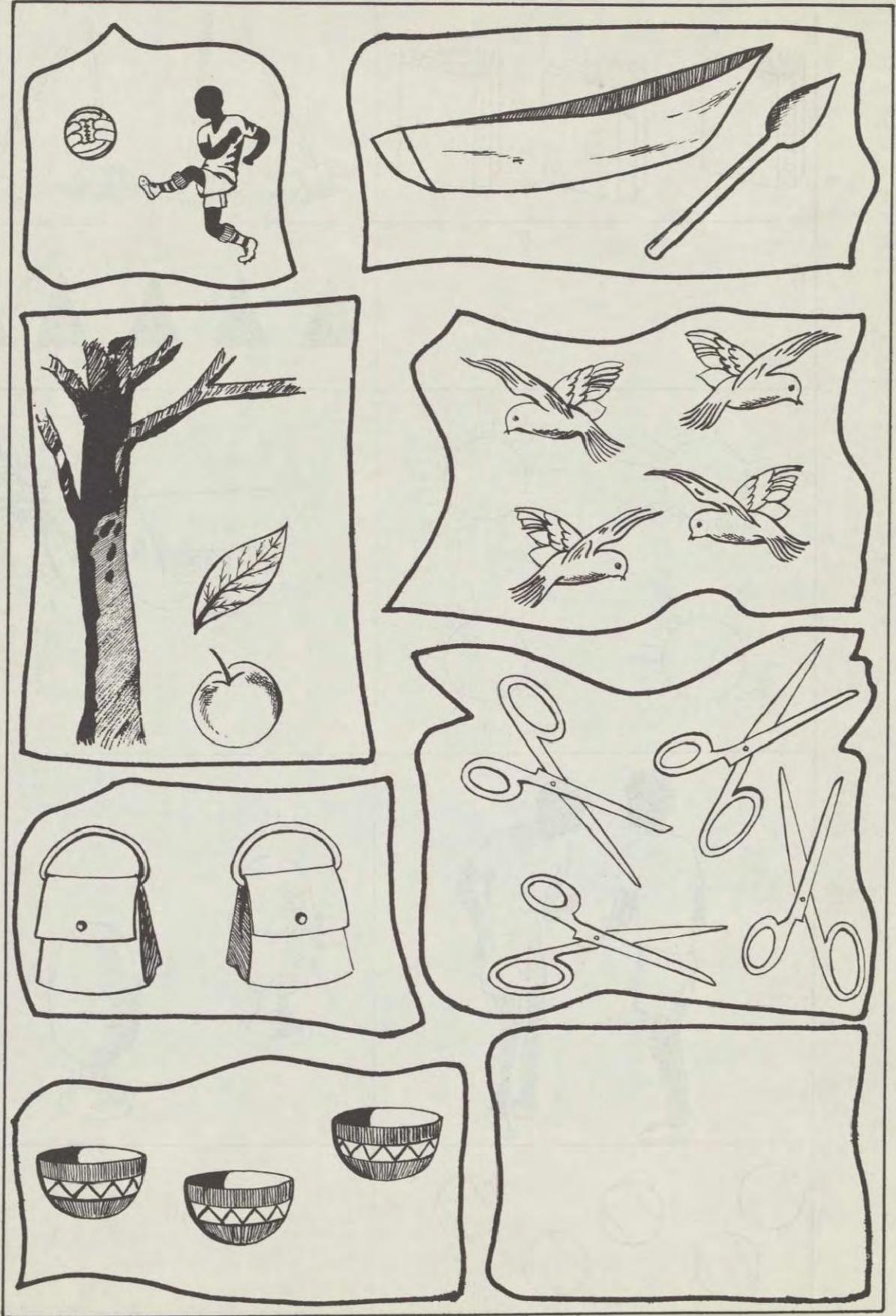
The preparation of these books for publication was coordinated at the offices of Educational Services Incorporated by Stanley D. Weinstein. Editorial services were provided by Edward Webster under the direction of Professors Hardgrove, Haag, and Hill. Typing and layout were supervised by Barbara Morse and Sharon E. McGreevey. The cover was designed by Nat Bellantone and Edward Webster. Other art work was prepared at Entebbe by Mrs. Joan Fleet and in the United States by Kay Hildebrand, Margaret Starr O'Leary, and Alice C. Welch. Production was supervised by Edward Webster and Benjamin T. Richards.

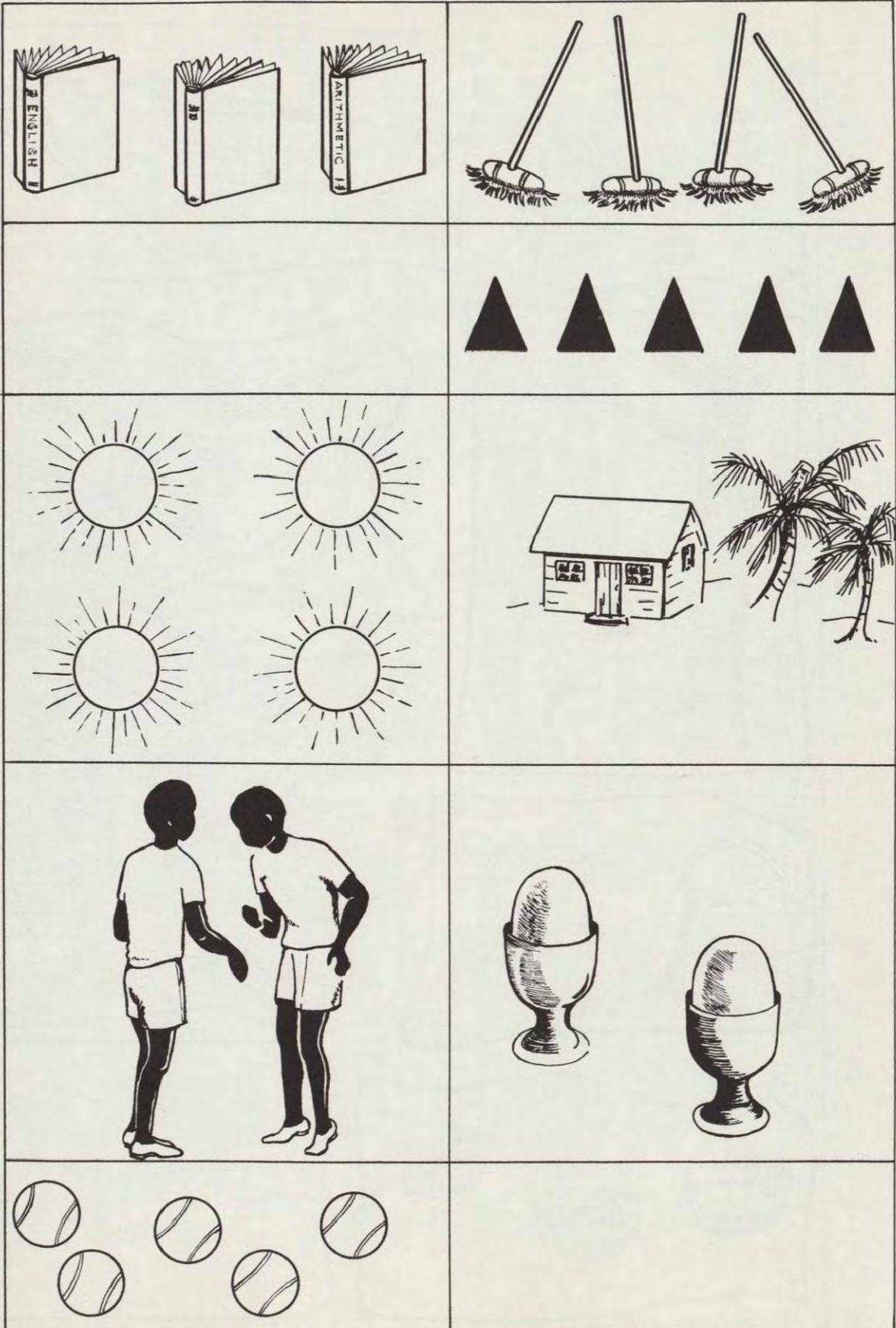


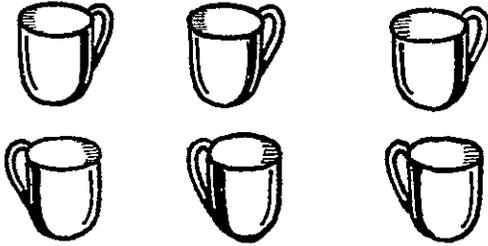
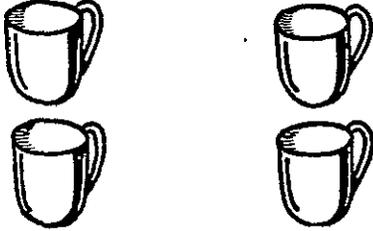
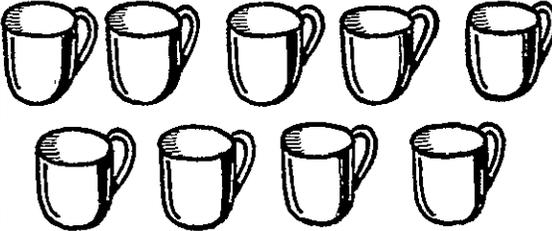
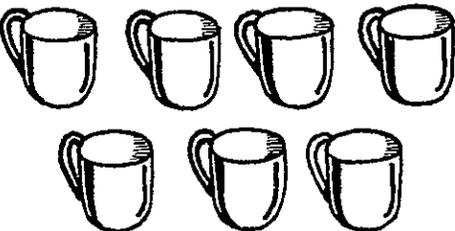
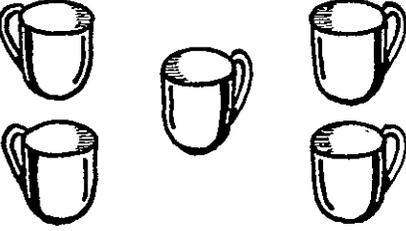
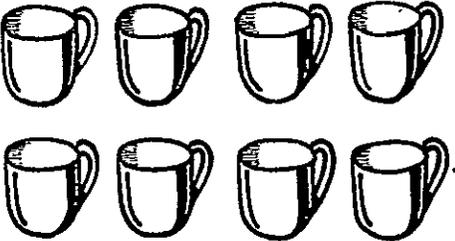










	Tens	Ones
1 ten and 5 ones =		
4 tens and 0 ones =		
9 tens and 7 ones =		
6 tens and 8 ones =		
8 tens and 4 ones =		
6 tens and 0 ones =		
8 tens and 7 ones =		
5 tens and 5 ones =		
2 tens and 3 ones =		
7 tens and 2 ones =		
3 tens and 4 ones =		

28 = ___ tens and ___ ones.

45 = ___ tens and ___ ones.

79 = ___ tens and ___ ones.

40 = ___ tens and ___ ones.

56 = ___ tens and ___ ones.

60 = ___ tens and ___ ones.

86 = ___ tens and ___ ones.

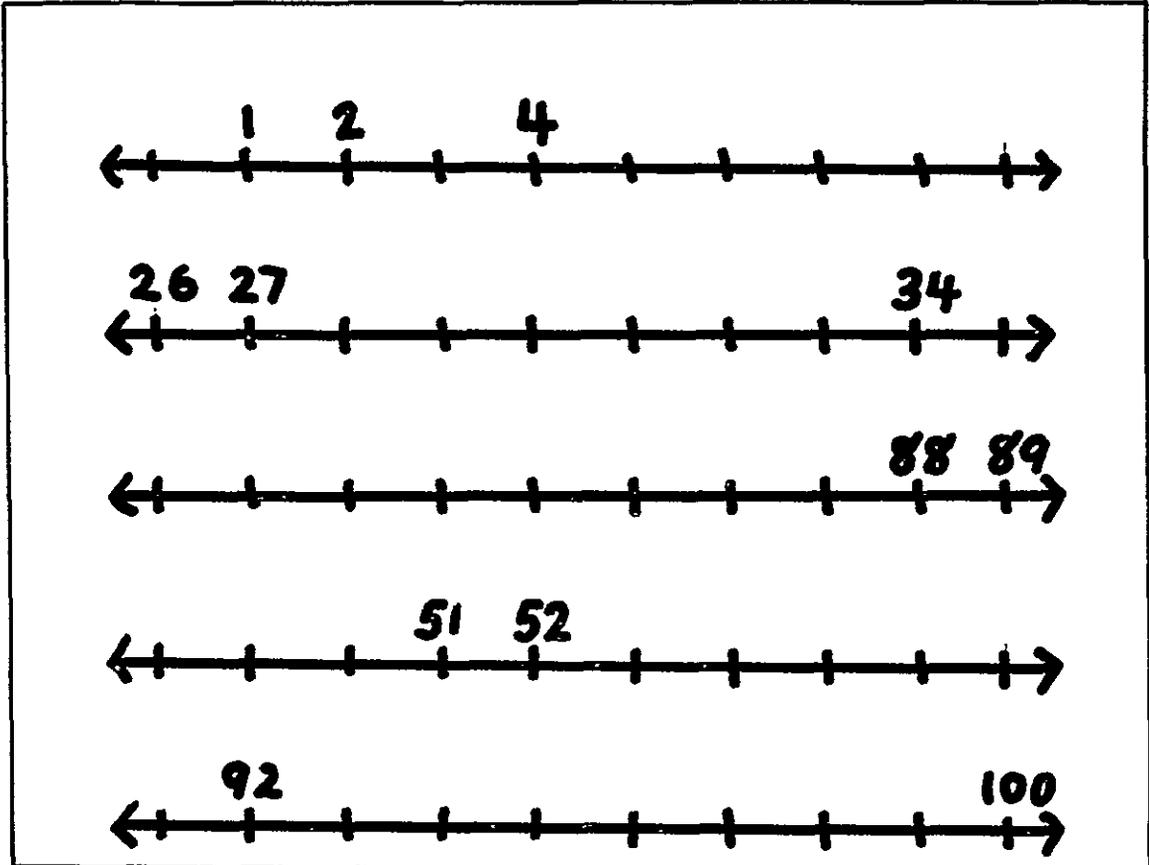
70 = ___ tens and ___ ones.

6 = ___ tens and ___ ones.

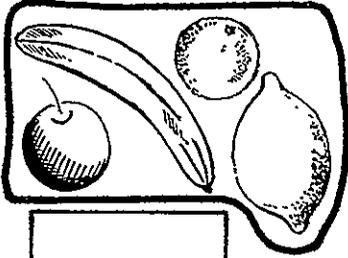
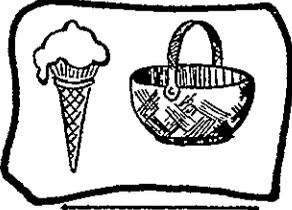
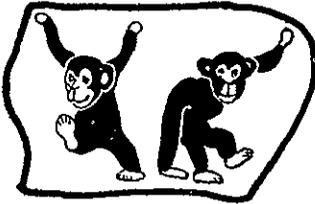
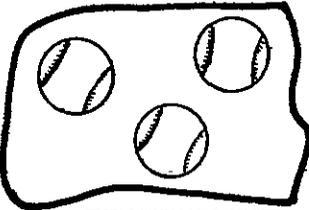
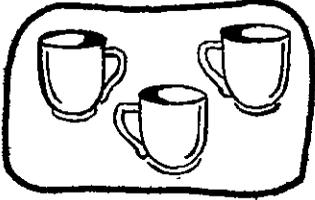
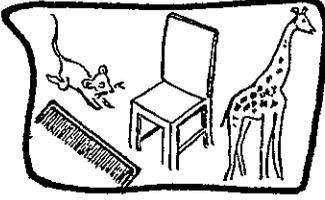
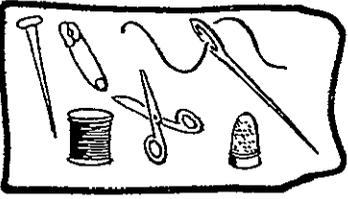
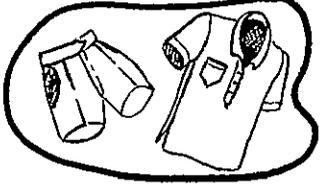
33 = ___ tens and ___ ones.

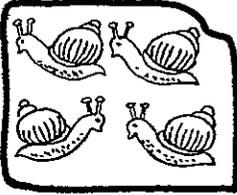
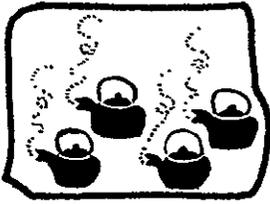
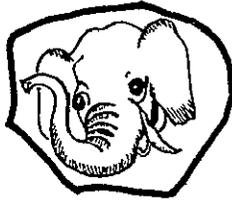
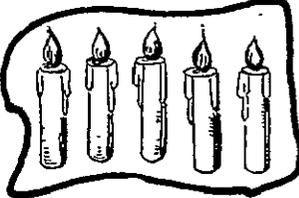
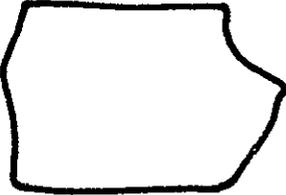
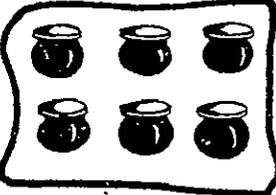
15 = ___ tens and ___ ones.

25 = ___ tens and ___ ones.



$9 < 12$	$19 > 18$
$29 \text{ --- } 23$	$19 \text{ --- } 91$
$62 \text{ --- } 52$	$73 \text{ --- } 69$
$10 \text{ --- } 100$	$65 \text{ --- } 56$
$44 \text{ --- } 34$	$50 \text{ --- } 5$

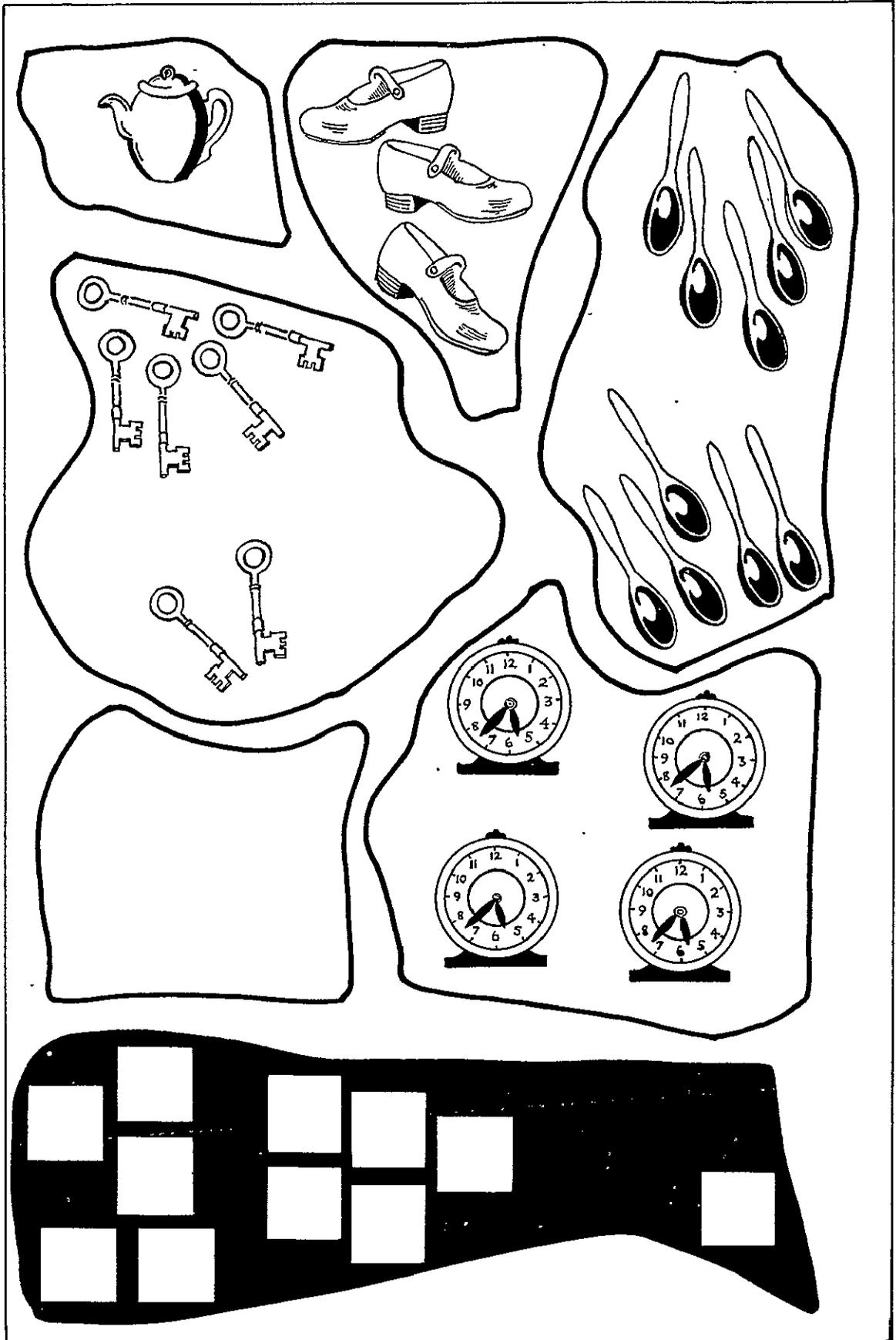
	U		=	
<input type="text"/>	+	<input type="text"/>	=	<input type="text"/>
	U		=	
<input type="text"/>	+	<input type="text"/>	=	<input type="text"/>
	U		=	
<input type="text"/>	+	<input type="text"/>	=	<input type="text"/>
	U		=	
<input type="text"/>	+	<input type="text"/>	=	<input type="text"/>

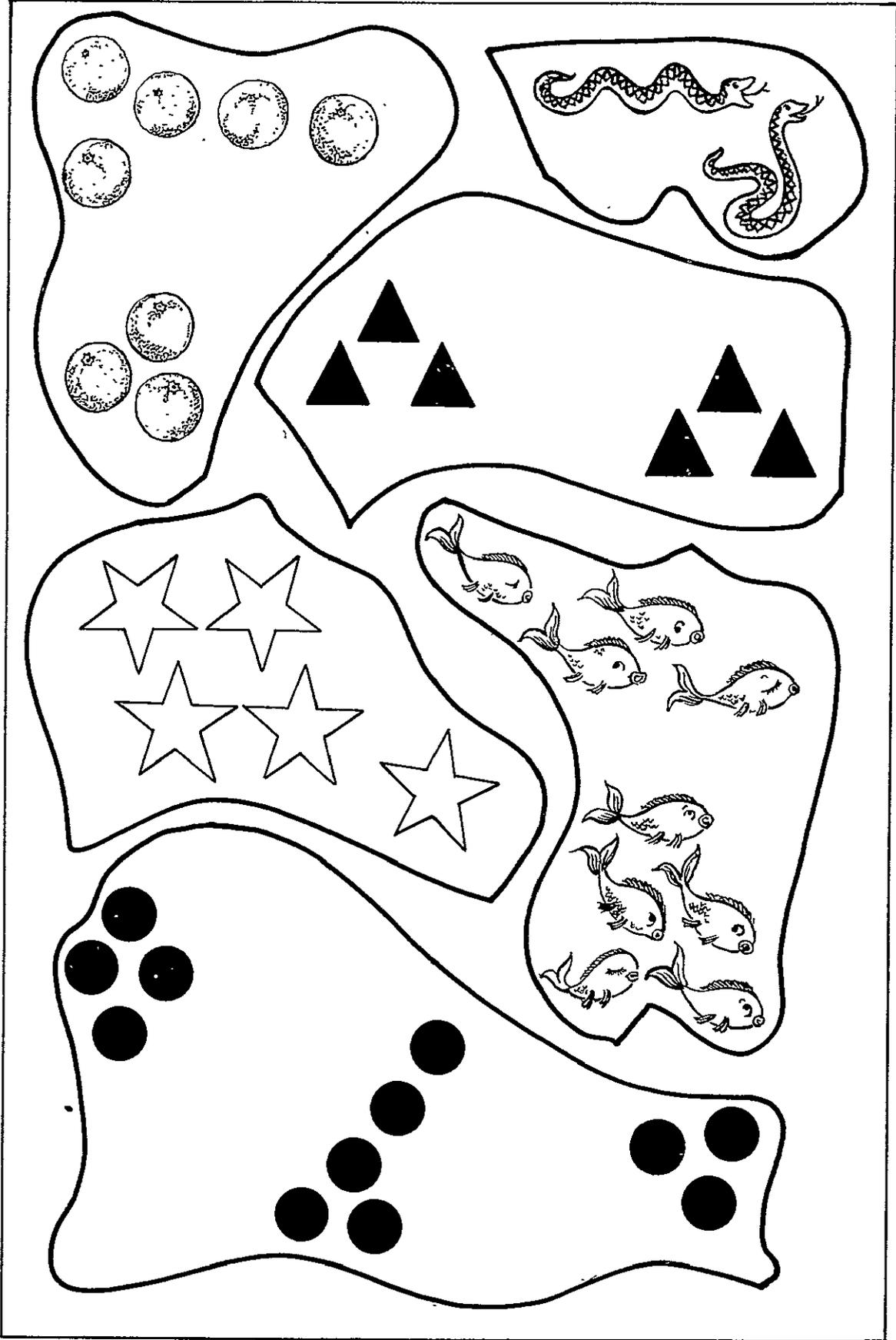
 <input type="text"/>	U +	 <input type="text"/>	=	<input type="text"/>
 <input type="text"/>	U +	 <input type="text"/>	=	<input type="text"/>
 <input type="text"/>	U +	 <input type="text"/>	=	<input type="text"/>
 <input type="text"/>	U +	 <input type="text"/>	=	<input type="text"/>

$4 + 1 = \square$	$8 + 1 = \square$
$9 + 0 = \square$	$2 + 4 = \square$
$2 + 3 = \square$	$3 + 4 = \square$
$5 + 2 = \square$	$2 + 6 = \square$
$1 + 4 = \square$	$1 + 5 = \square$
$8 + 0 = \square$	$3 + 5 = \square$
$6 + 1 = \square$	$6 + 3 = \square$
$3 + 2 = \square$	$5 + 3 = \square$
$7 + 1 = \square$	$4 + 4 = \square$
$2 + 7 = \square$	$2 + 5 = \square$
$5 + 4 = \square$	$1 + 7 = \square$
$3 + 6 = \square$	$2 + 3 = \square$
$4 + 5 = \square$	$4 + 3 = \square$
$5 + 0 = \square$	$0 + 9 = \square$
$1 + 8 = \square$	$6 + 2 = \square$

$\square = 8 + 1$	$7 + 2 = \square$
$\square = 2 + 6$	$2 + 2 = \square$
$\square = 0 + 5$	$1 + 1 = \square$
$\square = 1 + 7$	$8 + 0 = \square$
$\square = 3 + 4$	$6 + 2 = \square$
$\square = 4 + 5$	$5 + 2 = \square$
$\square = 2 + 4$	$3 + 3 = \square$
$\square = 3 + 5$	$4 + 3 = \square$
$\square = 5 + 1$	$6 + 3 = \square$
$\square = 6 + 0$	$1 + 8 = \square$
$\square = 4 + 2$	$2 + 7 = \square$
$\square = 0 + 9$	$5 + 3 = \square$

$4 + 2 = \square$	$3 + 4 = \square$
$3 + 1 = \square$	$2 + 5 = \square$
$\square = 5 + 1$	$\square = 4 + 1$
$\square = 7 + 1$	$\square = 6 + 1$
$\square = 2 + 4$	$\square = 3 + 2$
$6 + 3 = \square$	$5 + 2 = \square$
$7 + 2 = \square$	$\square = 8 + 1$
$\square = 3 + 3$	$\square = 3 + 5$
$\square = 2 + 3$	$\square = 4 + 4$
$4 + 3 = \square$	$9 + 0 = \square$
$5 + 4 = \square$	$6 + 2 = \square$
$\square = 5 + 3$	$\square = 1 + 4$





$10 + 6 = \square$	$3 + 12 = \square$
$5 + 10 = \square$	$12 + 4 = \square$
$10 + 1 = \square$	$4 + 12 = \square$
$12 + 3 = \square$	$12 + 5 = \square$
$16 + 2 = \square$	$13 + 4 = \square$
$2 + 16 = \square$	$4 + 13 = \square$
$14 + 2 = \square$	$5 + 12 = \square$
$11 + 7 = \square$	$1 + 17 = \square$
$6 + 12 = \square$	$18 + 0 = \square$
$3 + 14 = \square$	$16 + 0 = \square$
$2 + 15 = \square$	$1 + 15 = \square$
$1 + 16 = \square$	$15 + 2 = \square$
$15 + 1 = \square$	$11 + 5 = \square$
$17 + 1 = \square$	$6 + 11 = \square$
$13 + 5 = \square$	$5 + 11 = \square$

8 + 5 = <input type="text"/>	5 + 8 = <input type="text"/>
6 + 7 = <input type="text"/>	5 + 6 = <input type="text"/>
7 + 8 = <input type="text"/>	6 + 5 = <input type="text"/>
9 + 9 = <input type="text"/>	6 + 6 = <input type="text"/>
8 + 8 = <input type="text"/>	1 + 9 = <input type="text"/>
7 + 5 = <input type="text"/>	8 + 3 = <input type="text"/>
5 + 7 = <input type="text"/>	9 + 2 = <input type="text"/>
7 + 9 = <input type="text"/>	9 + 3 = <input type="text"/>
9 + 7 = <input type="text"/>	7 + 3 = <input type="text"/>
6 + 8 = <input type="text"/>	4 + 7 = <input type="text"/>
6 + 9 = <input type="text"/>	8 + 4 = <input type="text"/>
7 + 7 = <input type="text"/>	4 + 9 = <input type="text"/>
8 + 9 = <input type="text"/>	5 + 9 = <input type="text"/>
9 + 8 = <input type="text"/>	9 + 5 = <input type="text"/>
6 + 6 = <input type="text"/>	5 + 5 = <input type="text"/>

$2 + 0 = \square$

$0 + 4 = \square$

$0 + 9 = \square$

$5 + 0 = \square$

$0 + 3 = \square$

$7 + 0 = \square$

$0 + 0 = \square$

$$\begin{array}{r} 6 \\ +4 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ +8 \\ \hline \end{array}$$

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

$$\begin{array}{r} 3 \\ +12 \\ \hline \end{array}$$

$$\begin{array}{r} 14 \\ +1 \\ \hline \end{array}$$

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

$$\begin{array}{r} 5 \\ +4 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ +10 \\ \hline \end{array}$$

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

$$\begin{array}{r} 8 \\ +7 \\ \hline \end{array}$$

$$\begin{array}{r} 16 \\ +2 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ +9 \\ \hline \end{array}$$

$\begin{array}{r} 6 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +8 \\ \hline \end{array}$
$\begin{array}{r} 10 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +10 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +10 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ +4 \\ \hline \end{array}$
$\begin{array}{r} 12 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +11 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ +2 \\ \hline \end{array}$
$\begin{array}{r} 8 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +9 \\ \hline \end{array}$
$\begin{array}{r} 6 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ +10 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +11 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +12 \\ \hline \end{array}$
$\begin{array}{r} 17 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +13 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ +1 \\ \hline \end{array}$

+		
5	4 →	
2	4 →	
↓	↓	↓
		→

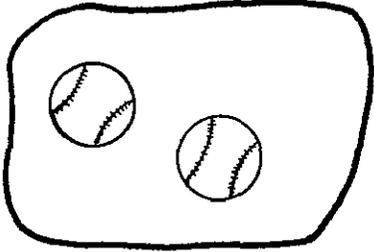
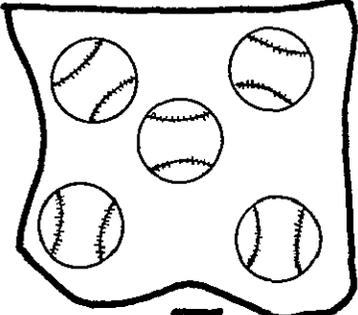
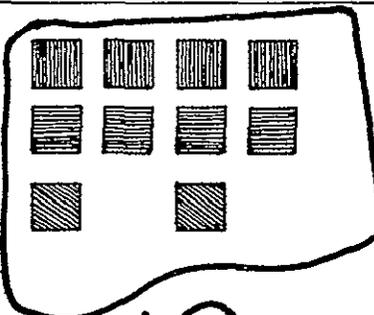
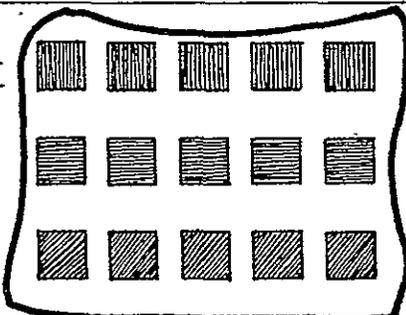
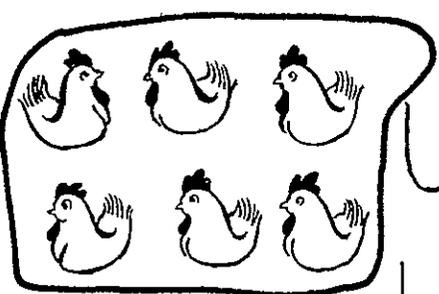
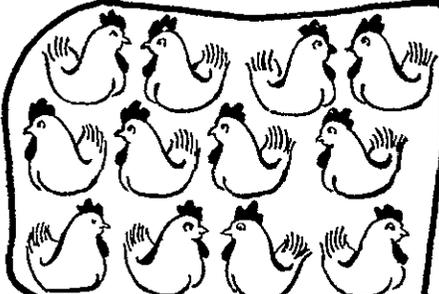
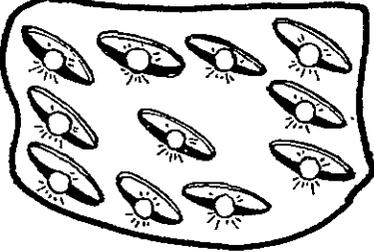
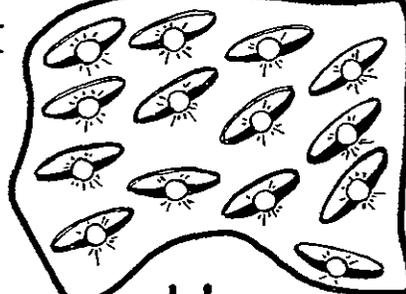
+		
2	1 →	
6	6 →	
↓	↓	↓
		→

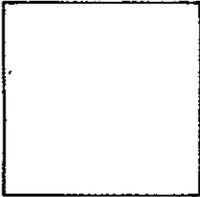
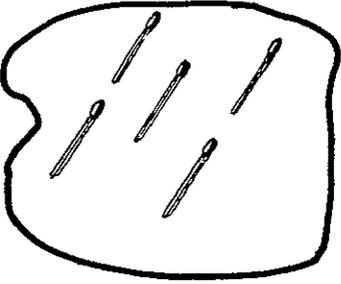
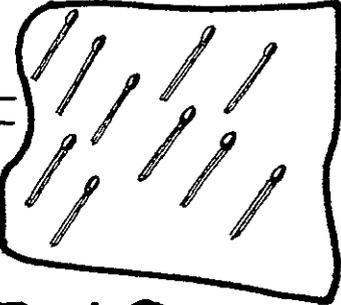
+		
5	5 →	
1	6 →	
↓	↓	↓
		→

+		
4	4 →	
5	2 →	
↓	↓	↓
		→

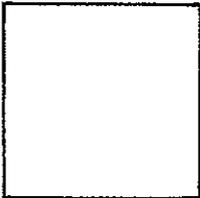
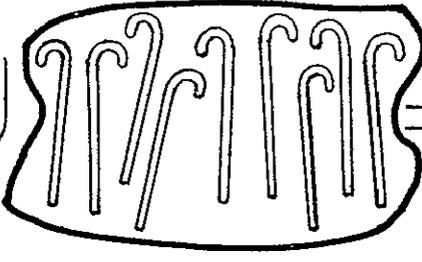
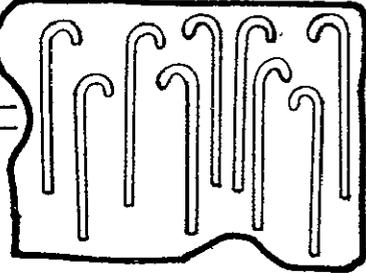
+	0	1	2	3	4
0					
1					
2					
3					
4					

+	5	6	7	8	9
5					
6					
7					
8					
9					

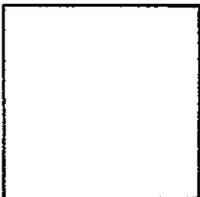
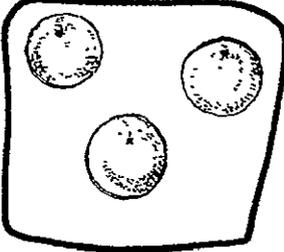
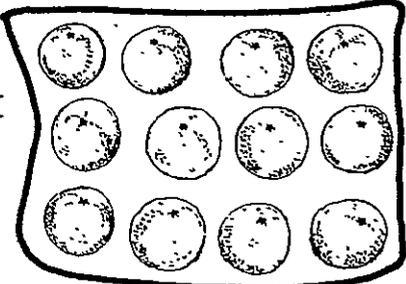
 2	U +	<input type="text"/>	=	 5
 10	U +	<input type="text"/>	=	 15
 6	U +	<input type="text"/>	=	 12
 11	U +	<input type="text"/>	=	 14


 U

 $=$


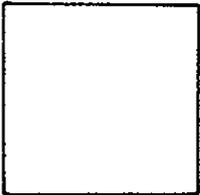
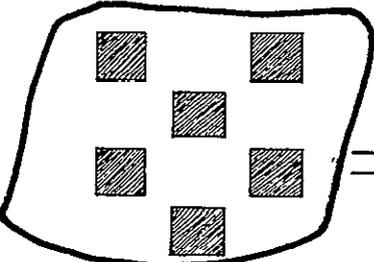
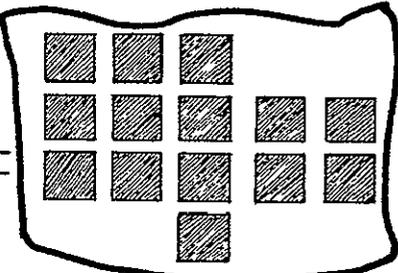
 $+ 5 = 10$


 U

 $=$


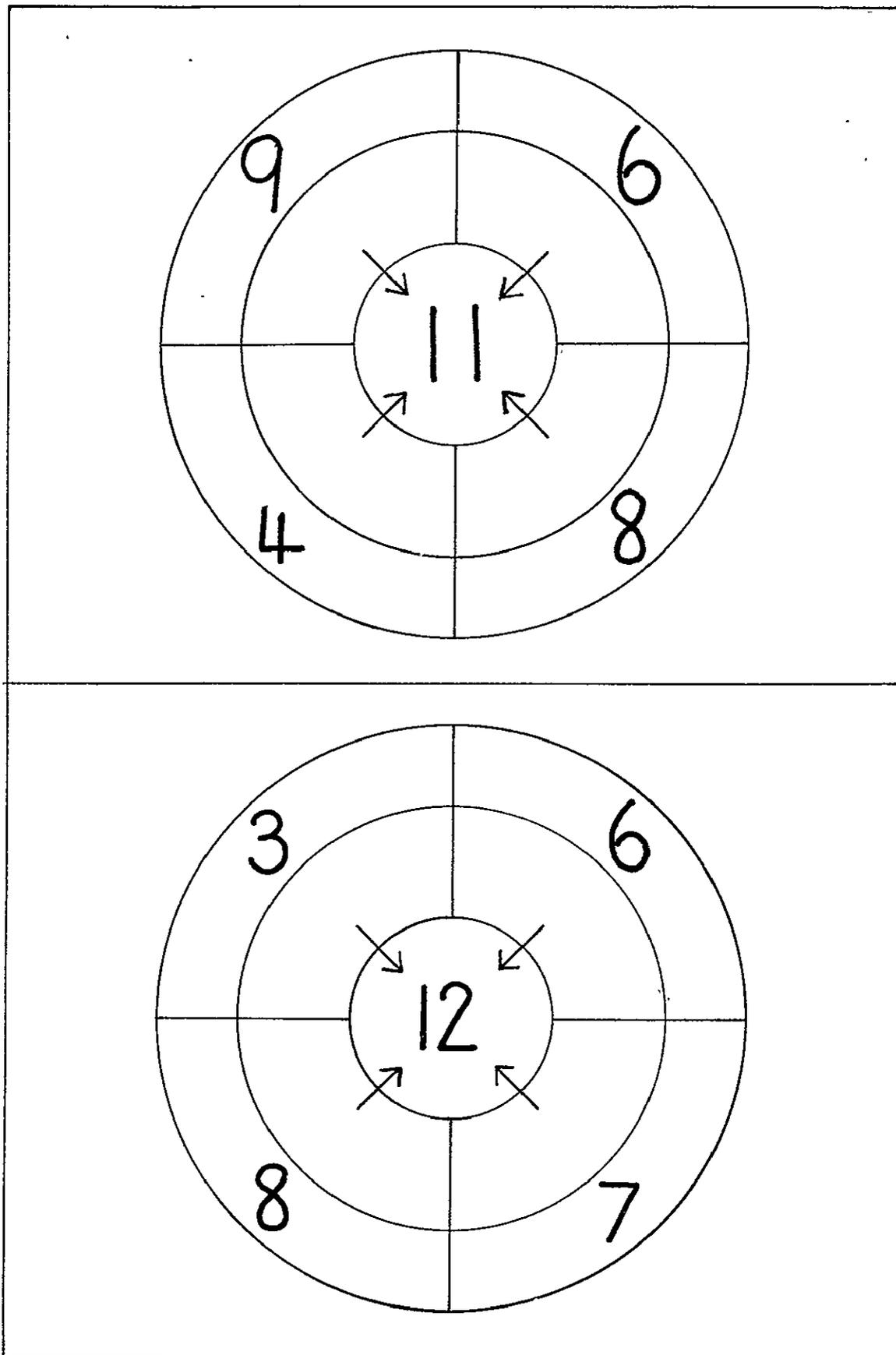
 $+ 9 = 9$


 U

 $=$


 $+ 3 = 12$


 U

 $=$


 $+ 6 = 14$



$4 + \square = 9$	$\square + 5 = 14$
$10 + \square = 15$	$\square + 10 = 10$
$6 + \square = 15$	$\square + 12 = 15$
$12 + \square = 18$	$\square + 4 = 10$
$11 + \square = 13$	$\square + 3 = 9$
$13 + \square = 13$	$\square + 11 = 12$
$3 + \square = 13$	$\square + 8 = 16$
$7 + \square = 12$	$\square + 13 = 15$
$5 + \square = 14$	$\square + 6 = 11$
$9 + \square = 16$	$\square + 9 = 15$
$2 + \square = 11$	$\square + 15 = 18$
$14 + \square = 17$	$\square + 7 = 12$
$15 + \square = 18$	$\square + 14 = 14$

$3+2 = \square + 4$	$\square + 7 = 4+6$
$4+5 = \square + 7$	$\square + 2 = 6+6$
$10+3 = \square + 12$	$8 + \square = 1+9$
$9+7 = \square + 10$	$12+6 = \square + 9$
$6+1 = \square + 3$	$10+2 = \square + 7$
$9+2 = 5 + \square$	$4+8 = 7 + \square$
$1+8 = 2 + \square$	$3+11 = \square + 7$
$14+2 = 3 + \square$	$6+8 = \square + 10$
$3+3 = 4 + \square$	$5 + \square = 7+8$
$7+3 = 5 + \square$	$9 + \square = 8+3$
$7 + \square = 6+9$	$\square + 4 = 7+5$
$14 + \square = 15+0$	$\square + 13 = 4+10$
$3 + \square = 4+5$	$3+11 = 7 + \square$

15	

16	

17	

18	

$4 + 5 = \square + 3$

$10 + 3 = \square + 6$

$12 + 4 = \square + 8$

$7 + 7 = \square + 6$

$9 + 8 = 7 + \square$

$0 + 10 = 4 + \square$

$11 + 3 = 1 + \square$

$10 + \square = 6 + 6$

$4 + \square = 8 + 7$

$16 + \square = 9 + 9$

$\square + 2 = 7 + 5$

$\square + 1 = 5 + 6$

$\square + 13 = 4 + 12$

$7 + \square = 6 + 8$

$\square + 8 = 3 + 13$

$5 + 12 = \square + 10$

$9 + 8 = 11 + \square$

$6 + \square = 7 + 2$

$\square + 14 = 2 + 16$

$11 + 5 = \square + 8$

$13 + 2 = 9 + \square$

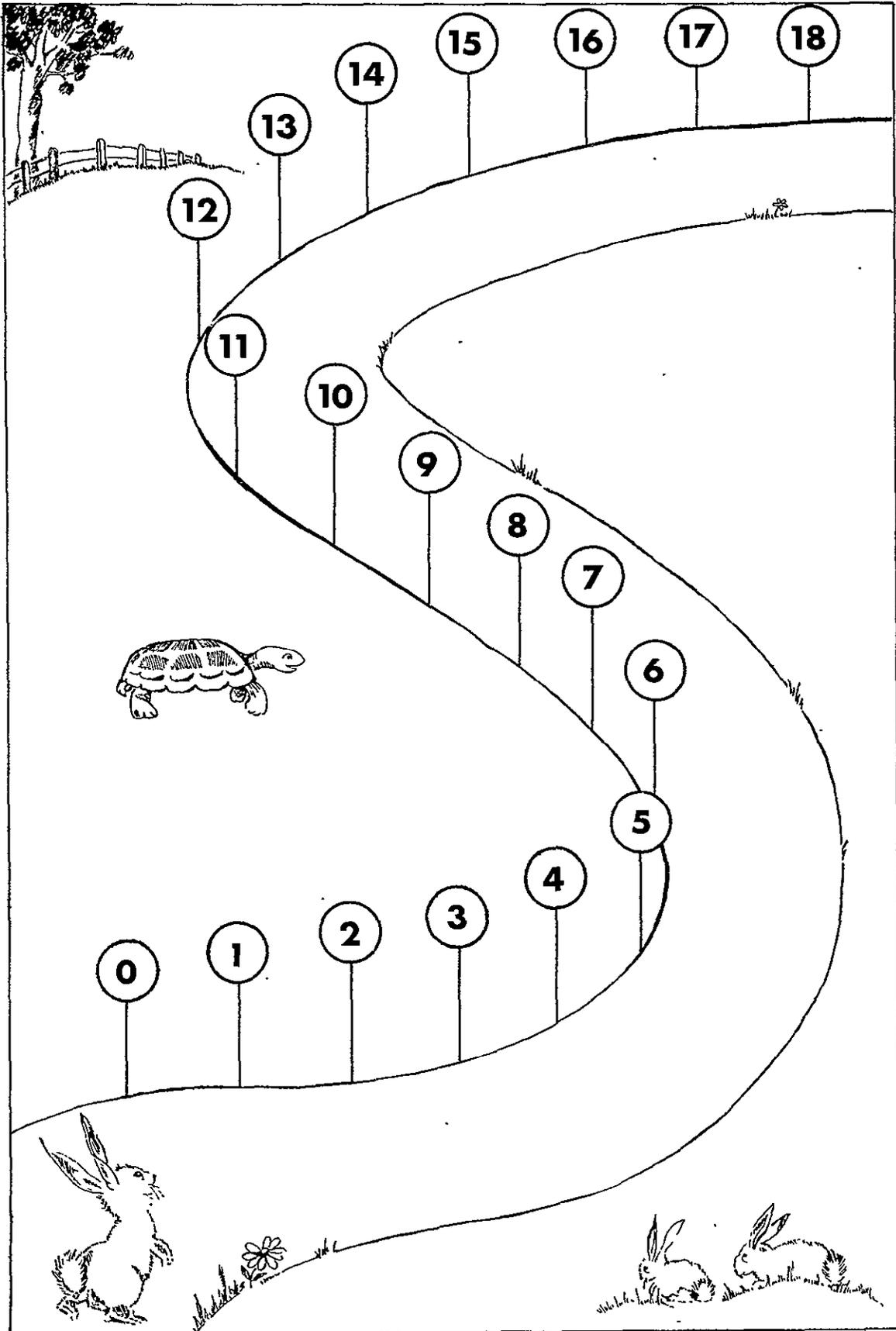
$8 + \square = 4 + 7$

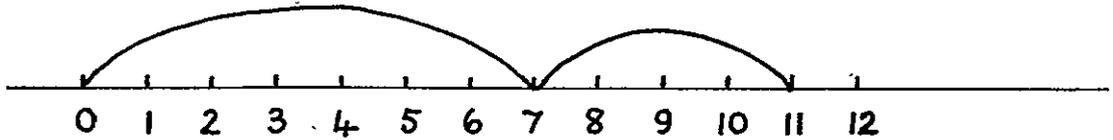
$\square + 6 = 8 + 4$

$9 + 9 = \square + 13$

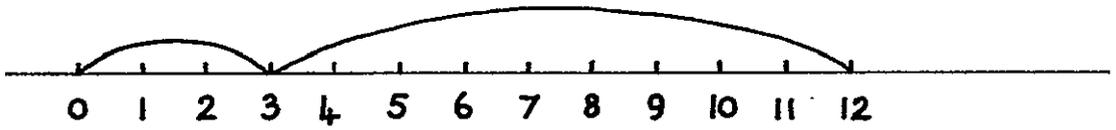
$\square + 0 = 8 + 7$

$15 + 2 = 11 + \square$

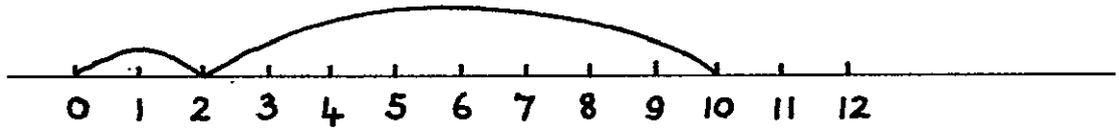




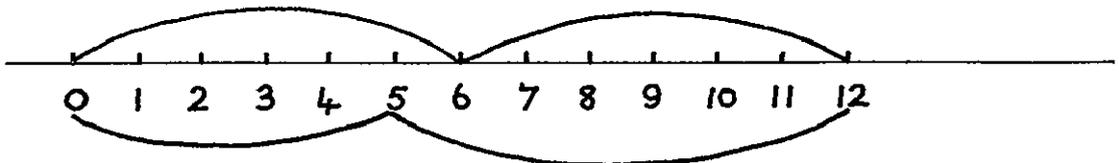
$$\square + \square = \square$$



$$\square + \square = \square$$



$$\square + \square = \square$$



$$\square + \square = \square + \square$$

$\begin{array}{r} 7 \\ + 3 \\ \hline \square \end{array}$	$\begin{array}{r} 3 \\ + 7 \\ \hline \square \end{array}$	$\begin{array}{r} 15 \\ + 3 \\ \hline \square \end{array}$	$\begin{array}{r} 3 \\ + 15 \\ \hline \square \end{array}$
$\begin{array}{r} 7 \\ + 8 \\ \hline \square \end{array}$	$\begin{array}{r} 8 \\ + 7 \\ \hline \square \end{array}$	$\begin{array}{r} 4 \\ + 11 \\ \hline \square \end{array}$	$\begin{array}{r} 11 \\ + 4 \\ \hline \square \end{array}$
$\begin{array}{r} \square \\ + 8 \\ \hline 8 \end{array}$	$\begin{array}{r} 8 \\ \square \\ \hline 8 \end{array}$	$\begin{array}{r} \square \\ + 6 \\ \hline 11 \end{array}$	$\begin{array}{r} 6 \\ \square \\ \hline 11 \end{array}$
$\begin{array}{r} \square \\ + 7 \\ \hline 10 \end{array}$	$\begin{array}{r} 7 \\ \square \\ \hline 10 \end{array}$	$\begin{array}{r} 6 \\ \square \\ \hline 8 \end{array}$	$\begin{array}{r} \square \\ + 6 \\ \hline 8 \end{array}$

$4 + 2 = \square$ $2 + 4 = \square$	$5 + 7 = \square$ $7 + 5 = \square$
$9 + 3 = \square$ $3 + 9 = \square$	$12 + 0 = \square$ $0 + 12 = \square$
$6 + 5 = \square$ $5 + 6 = \square$	$4 + 9 = \square$ $9 + 4 = \square$
$2 + 10 = \square$ $10 + 2 = \square$	$9 + 0 = \square$ $0 + 9 = \square$
$5 + 3 = \square$ $3 + 5 = \square$	$8 + 5 = \square$ $5 + 8 = \square$

$$4 + 3 = \square + 4$$

$$6 + 4 = \square + 6$$

$$7 + 5 = \square + 7$$

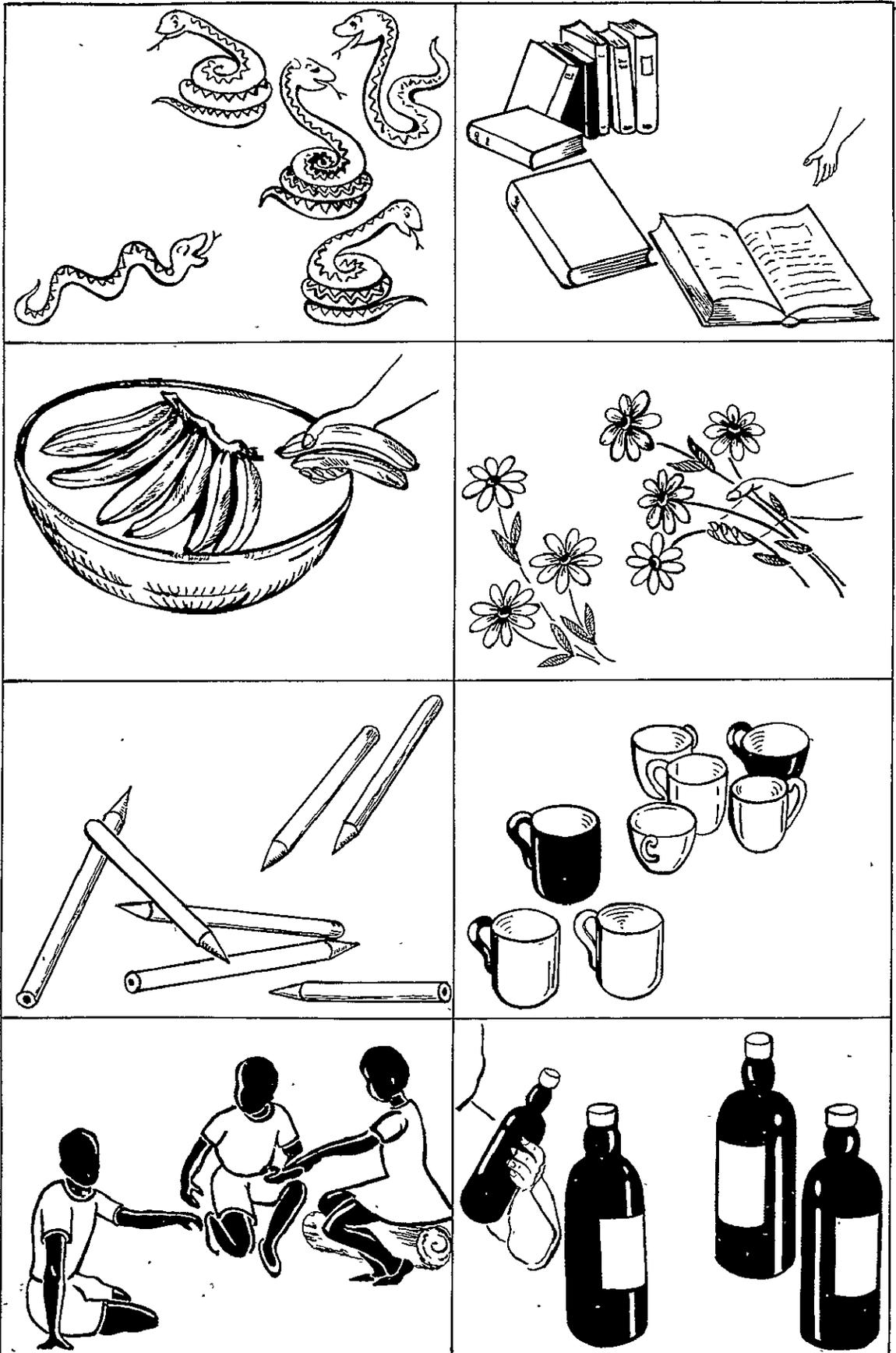
$$8 + \square = 6 + 8$$

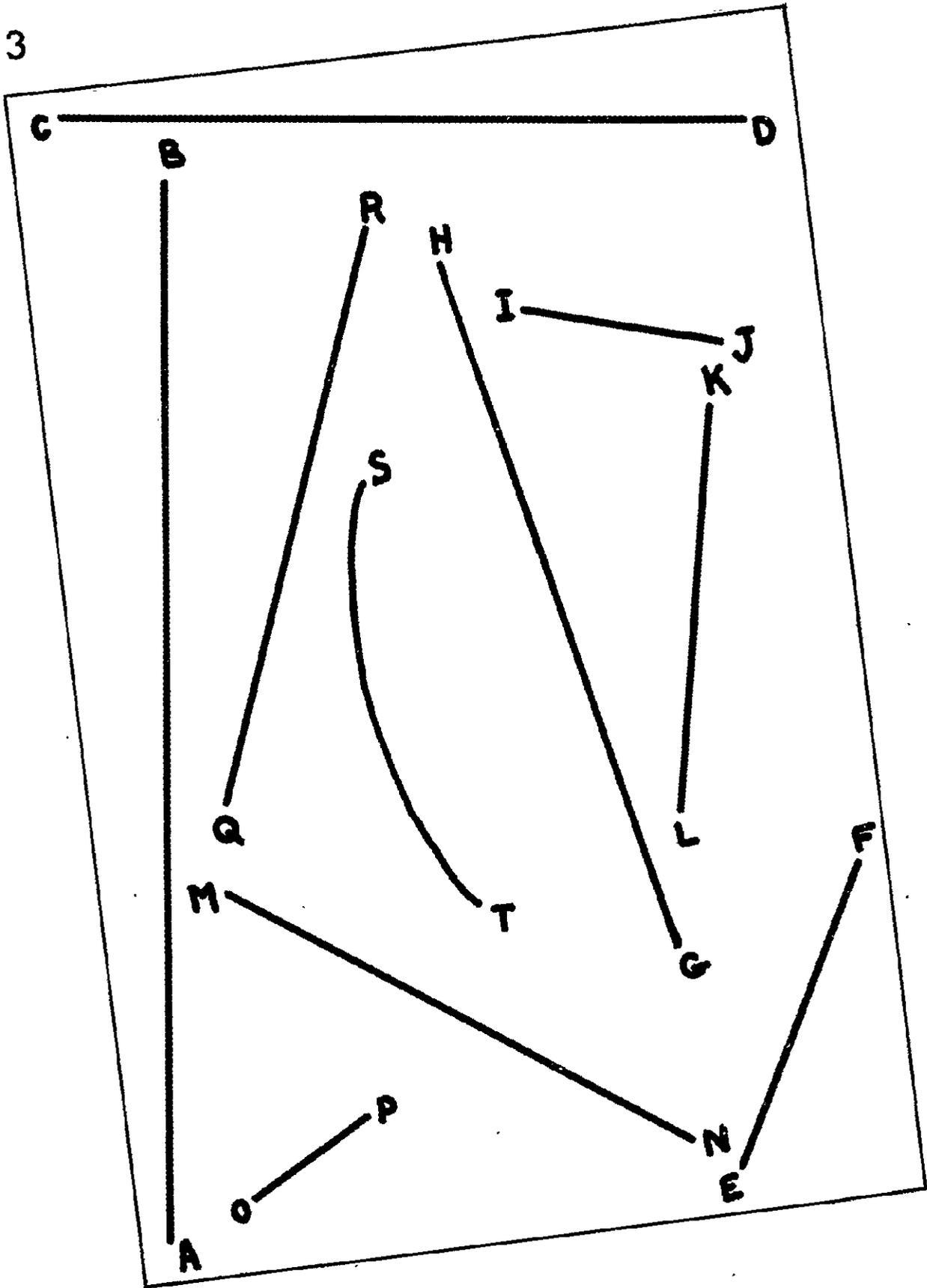
$$9 + \square = 3 + 9$$

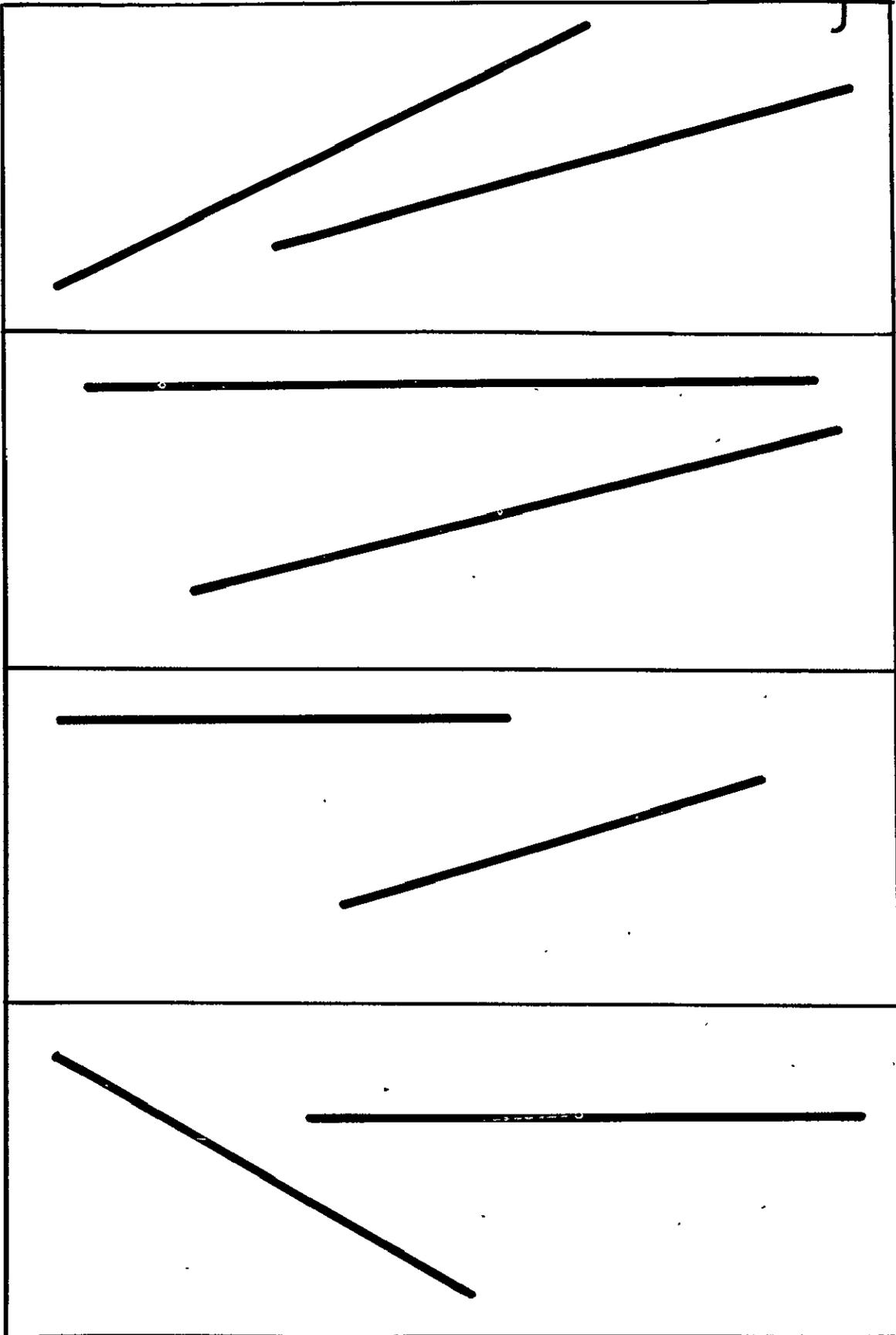
$$2 + \square = 7 + 2$$

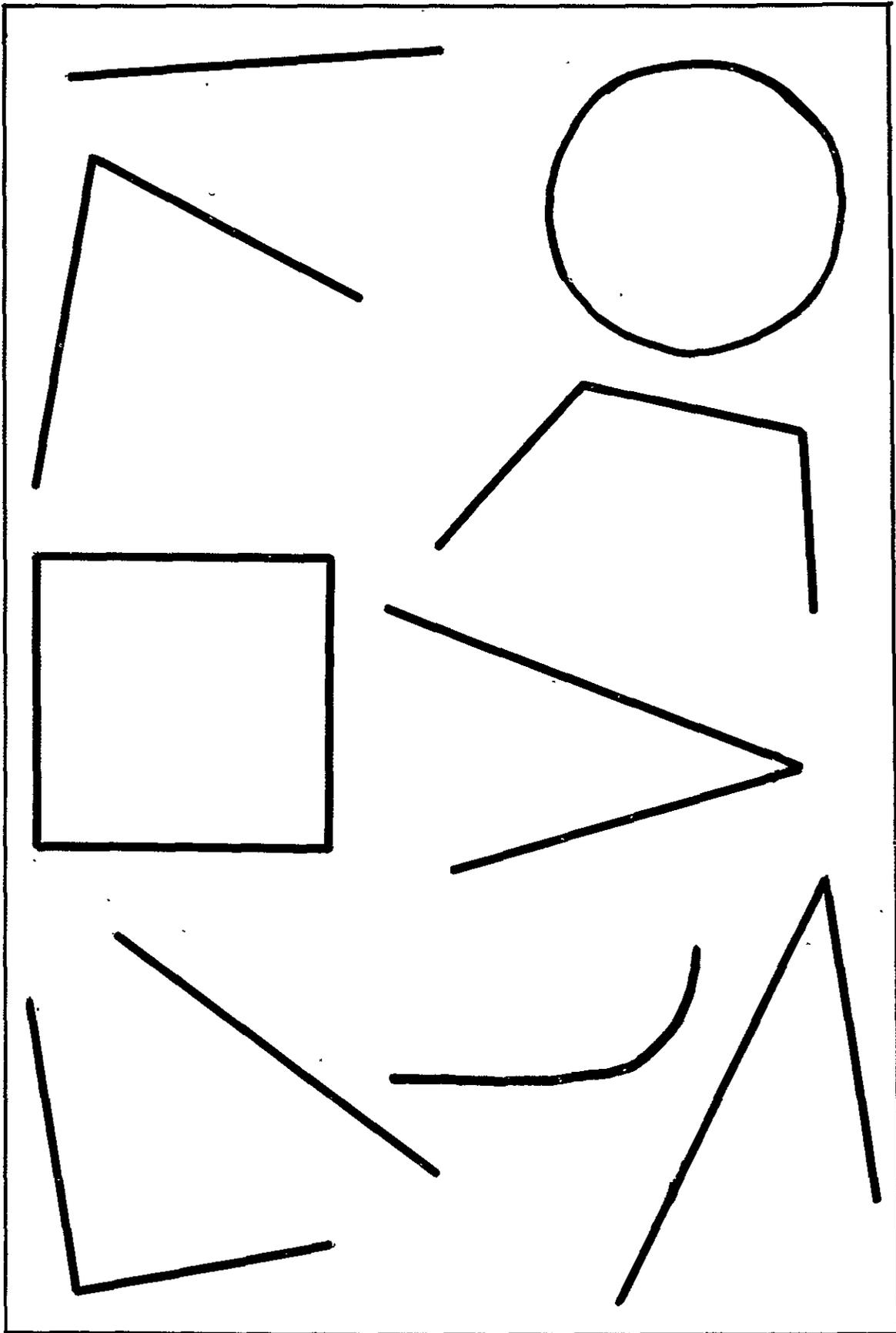
$$3 + \square = 10 + 3$$

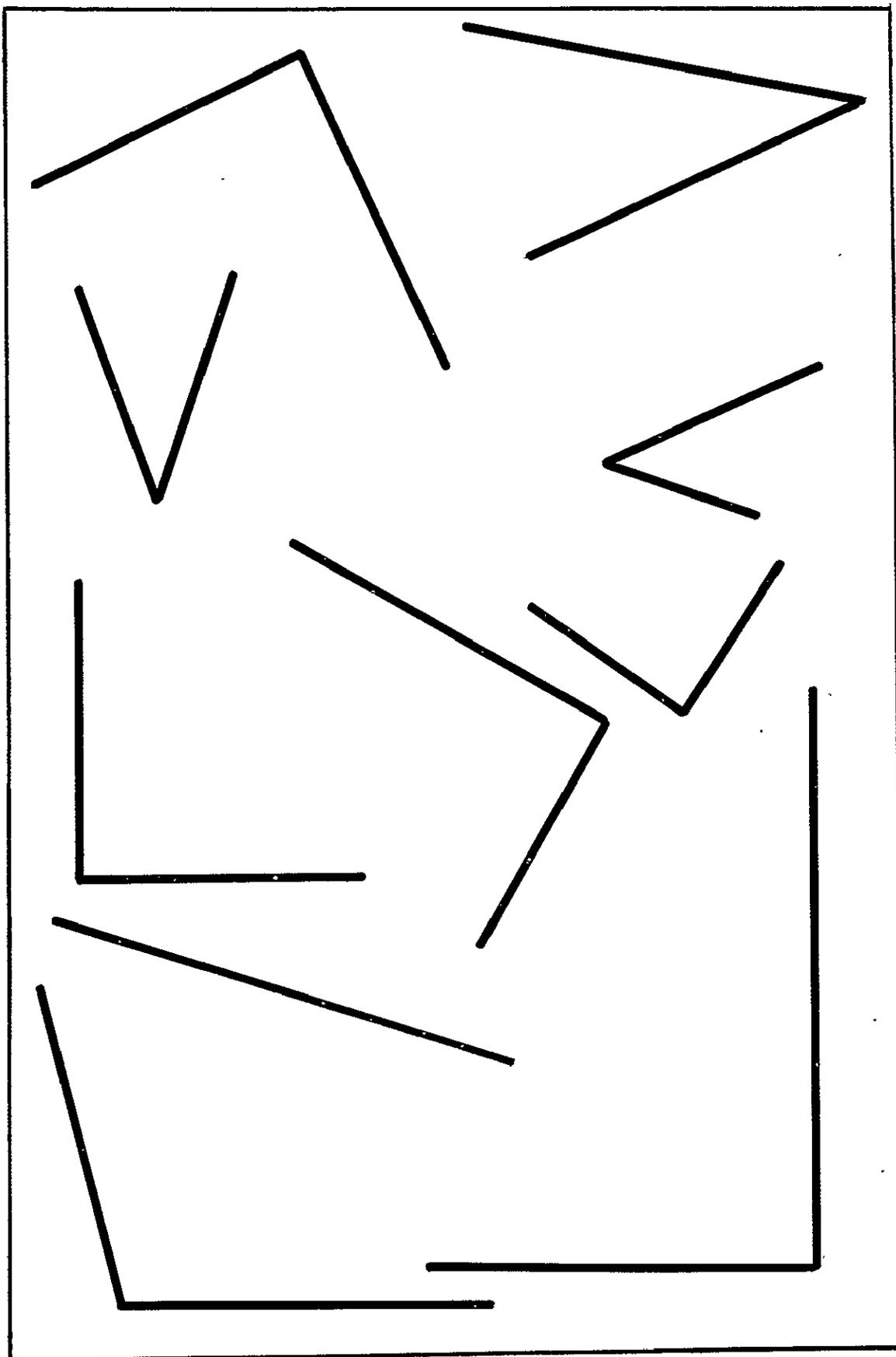
$$18 + \square = 0 + 18$$

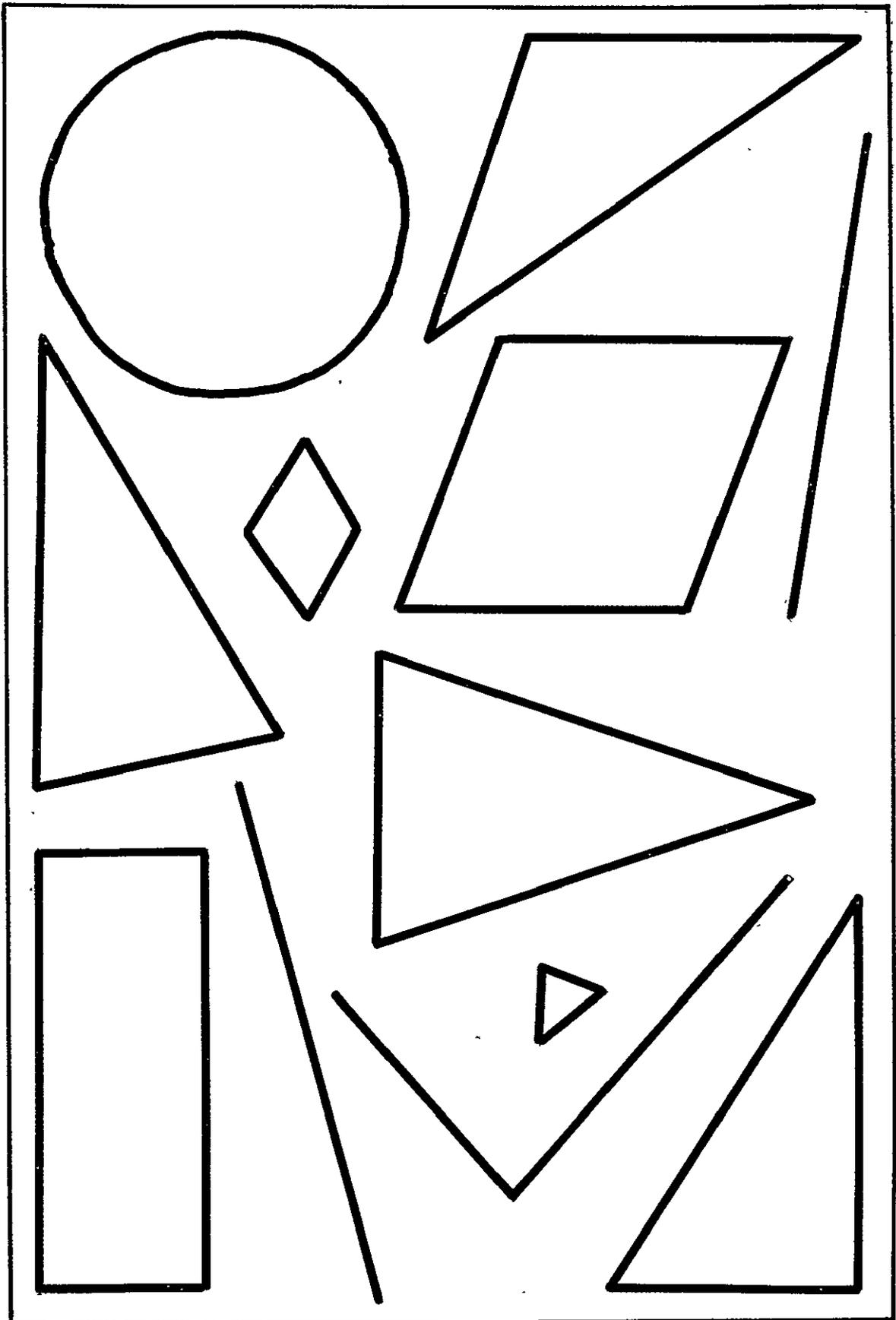


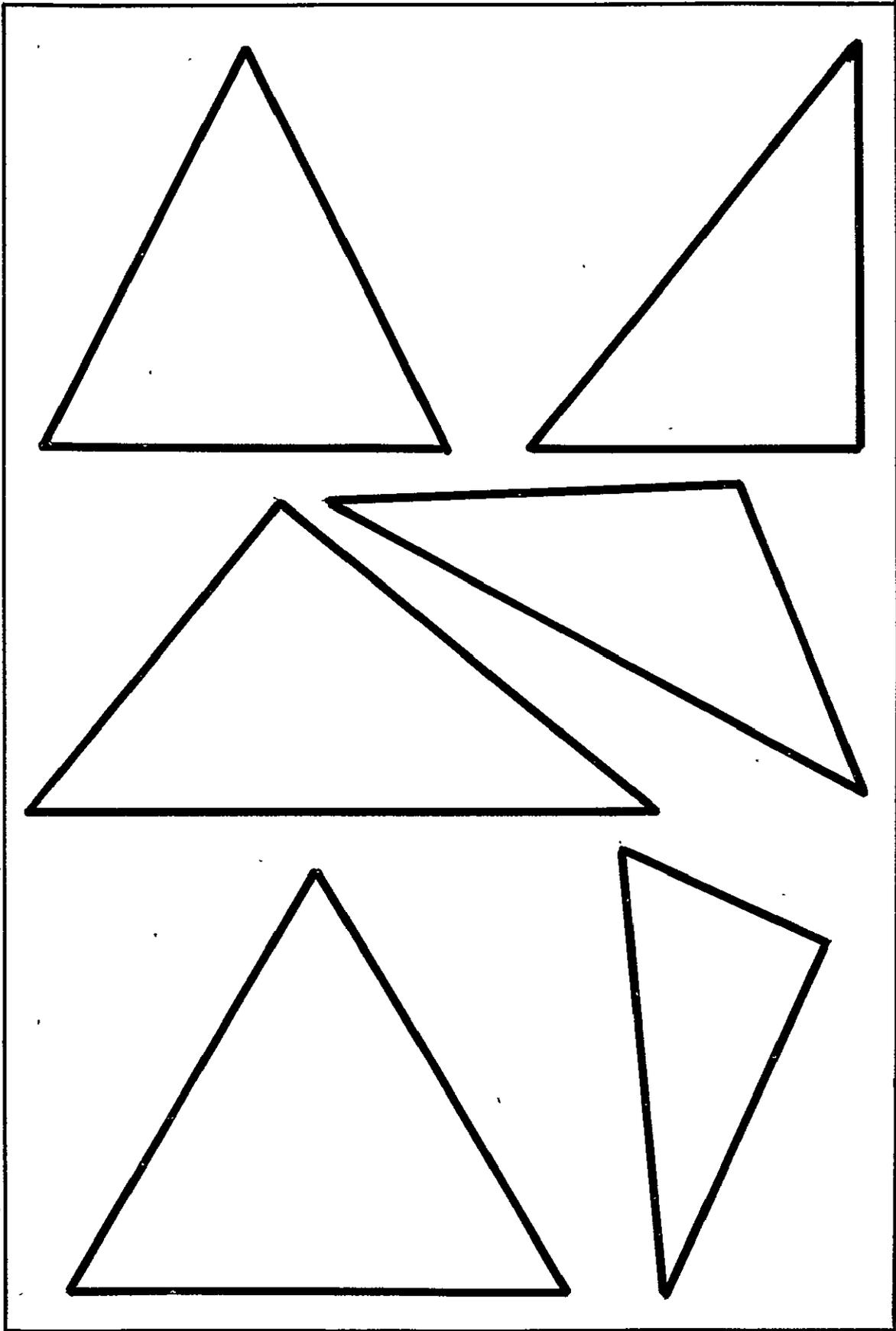


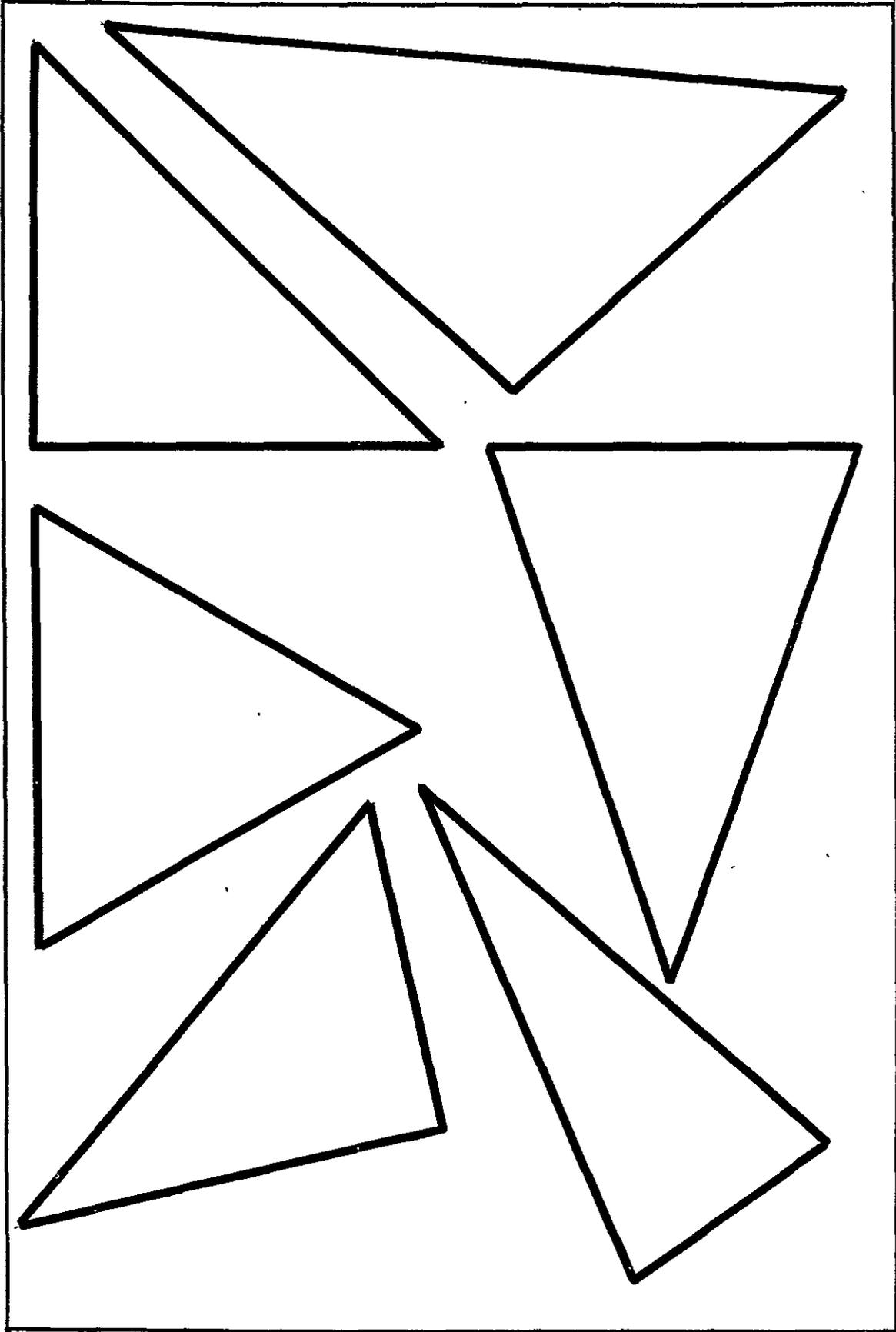


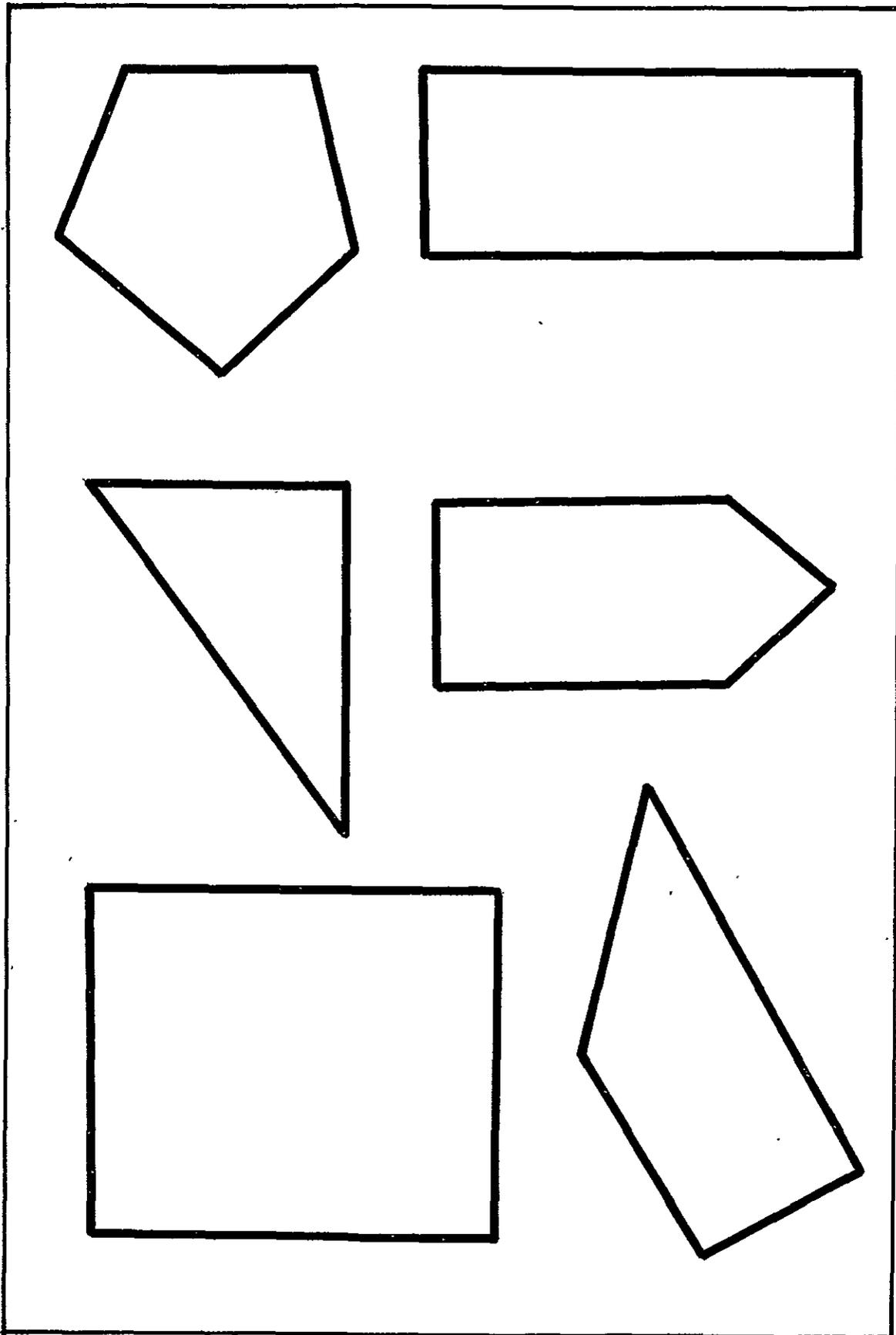


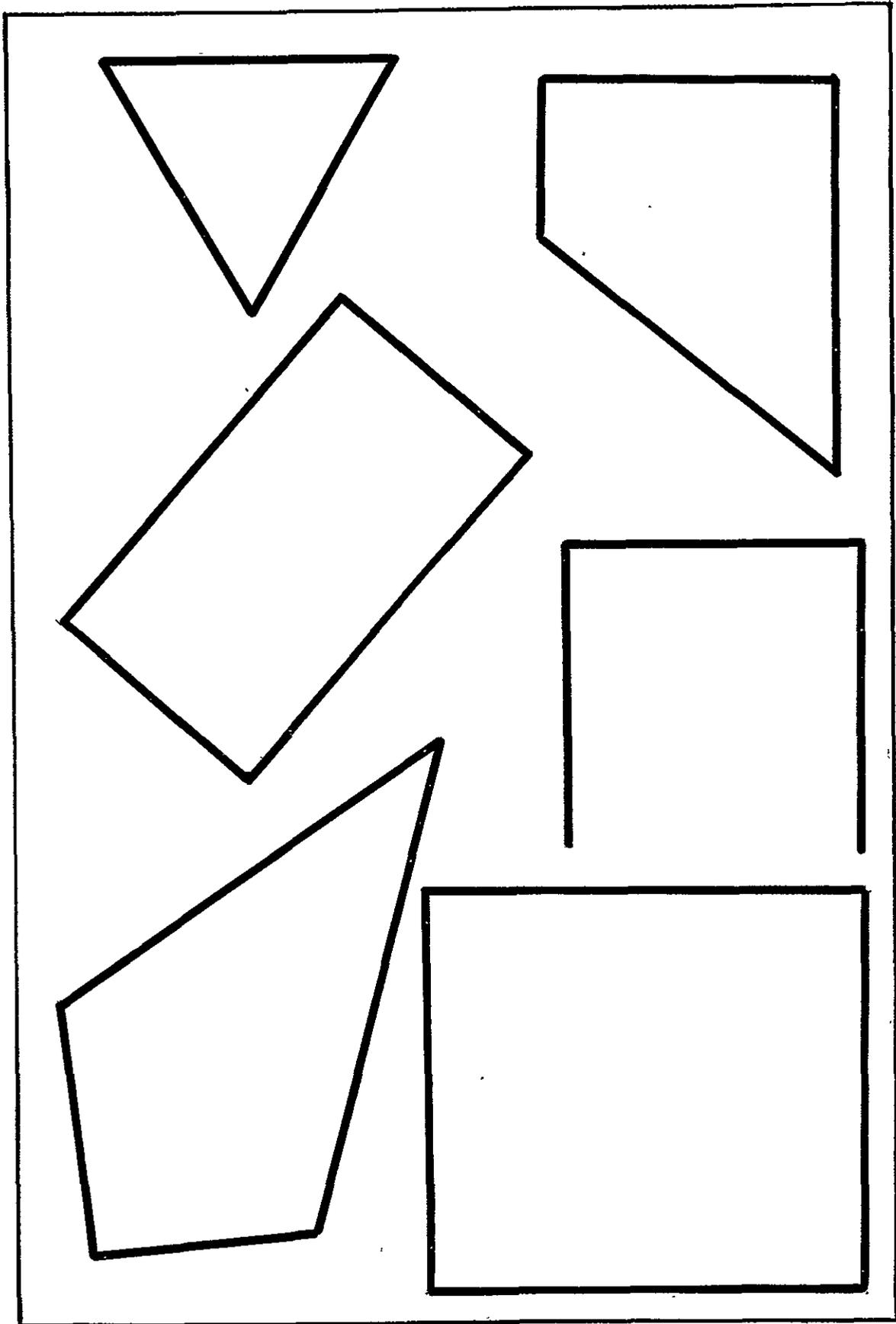


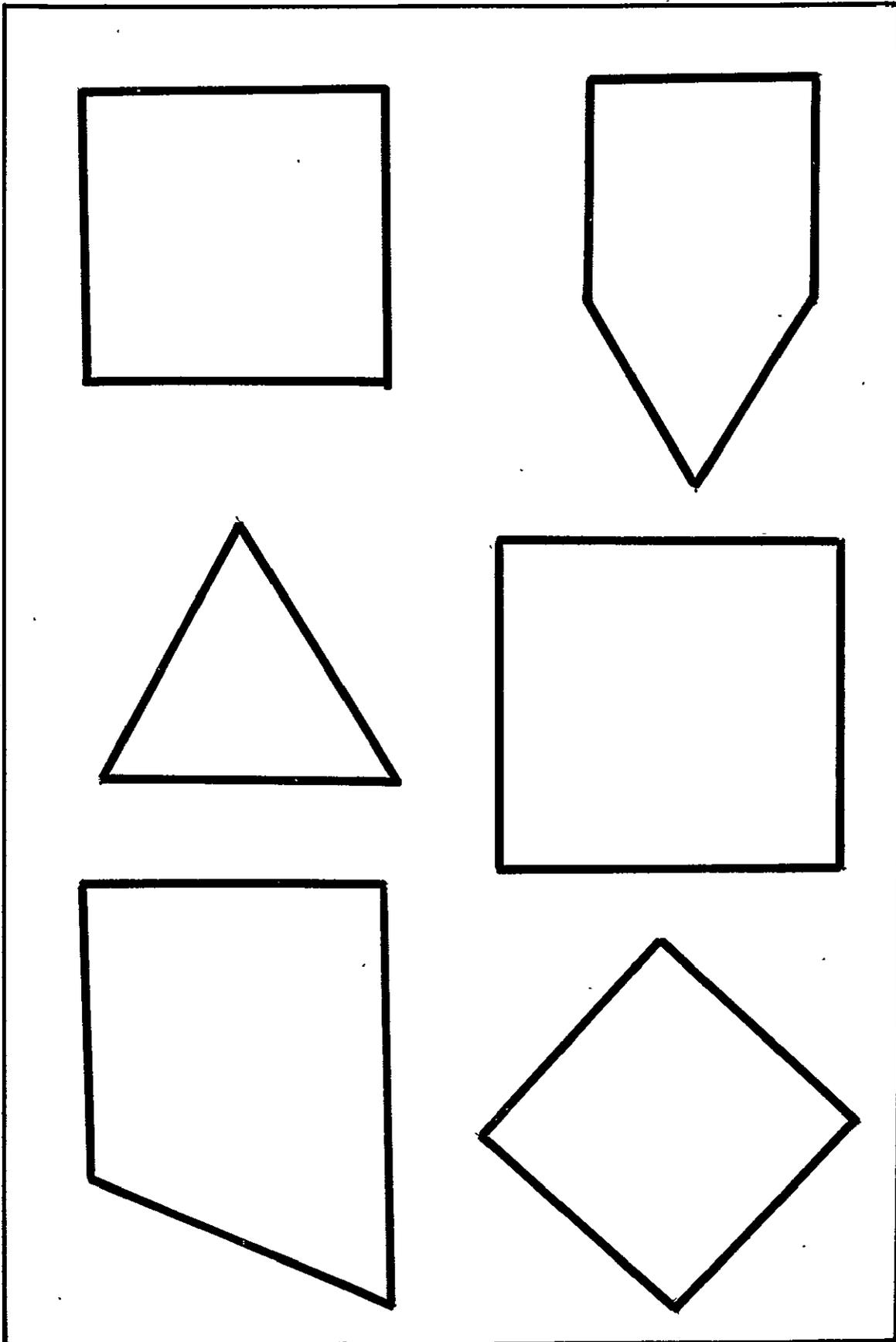


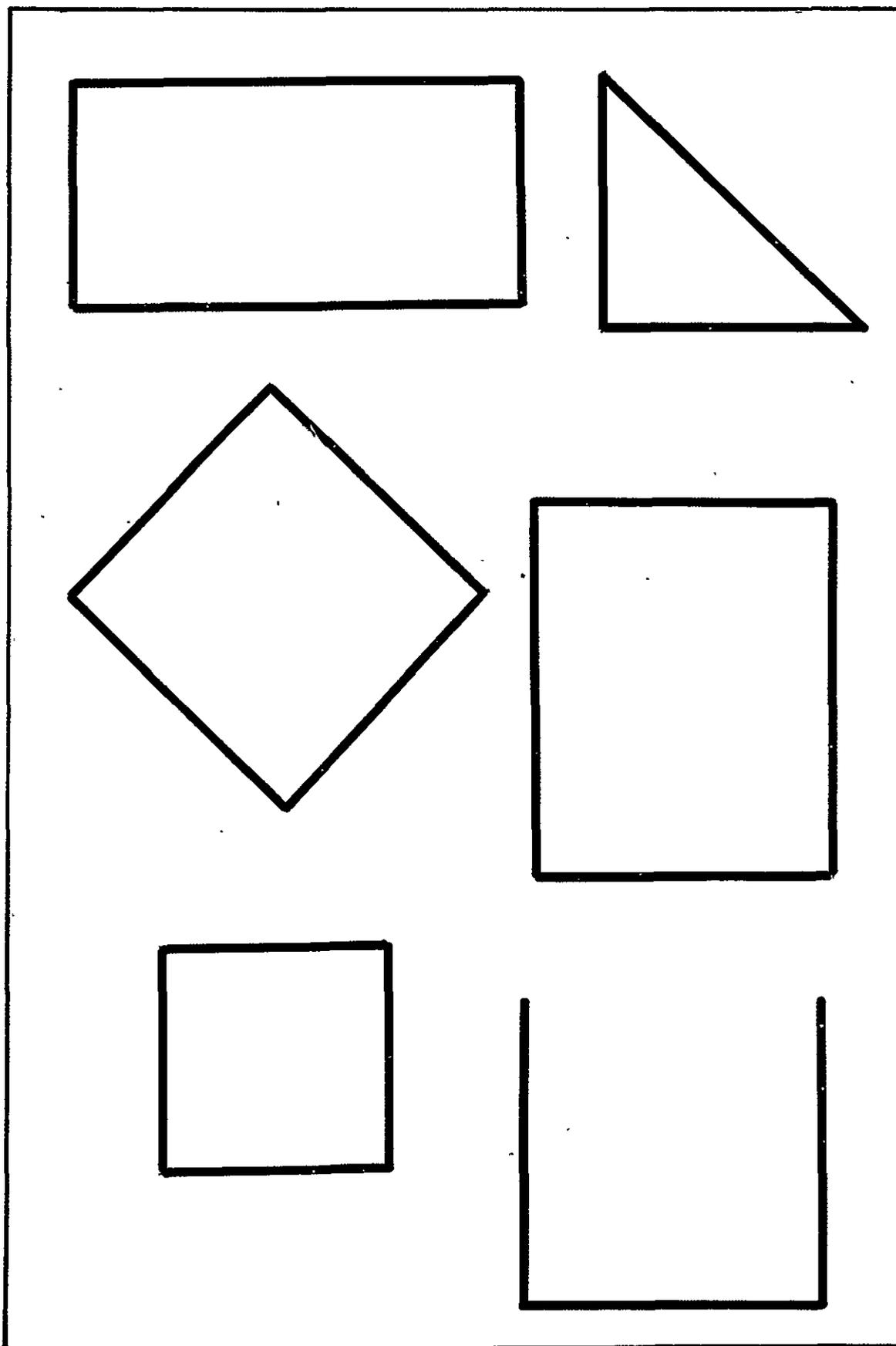


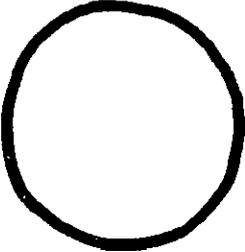
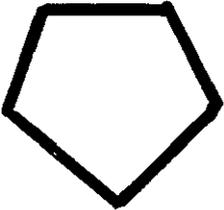
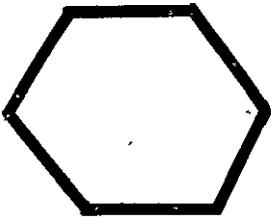
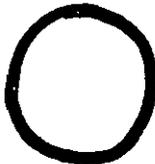


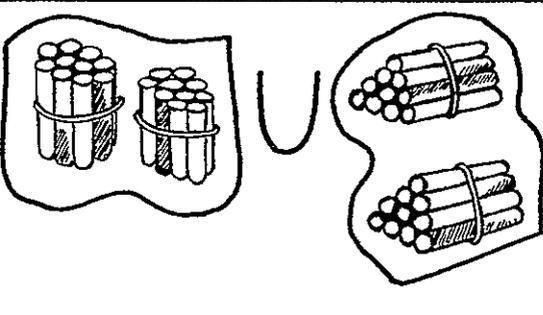
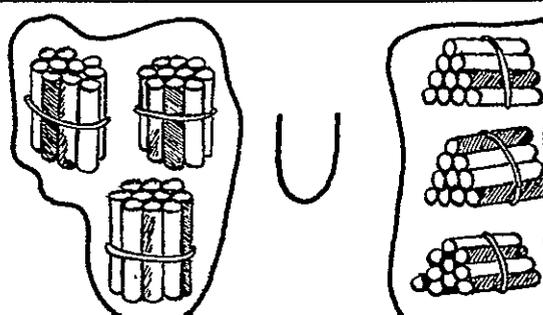
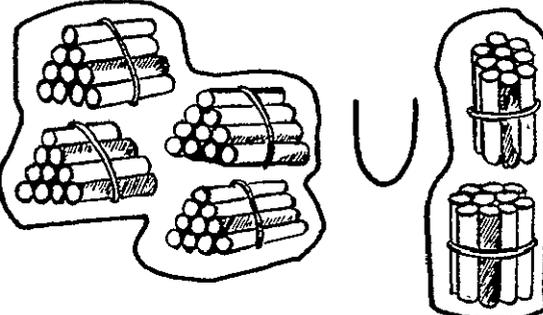
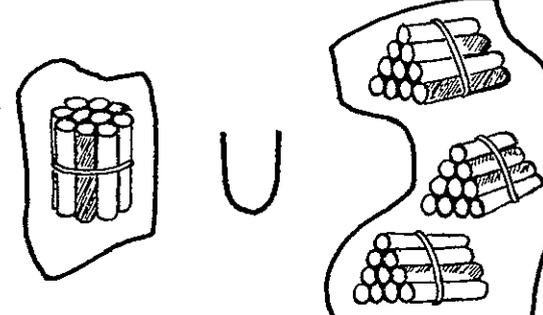
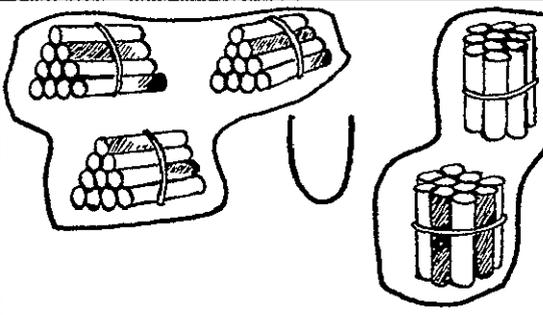
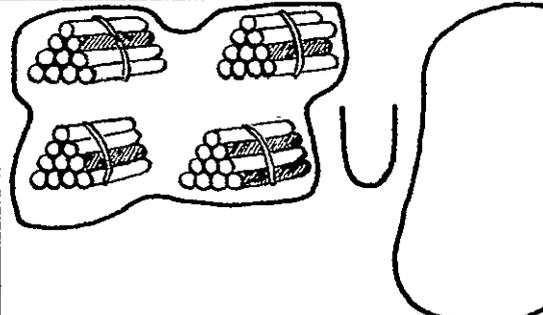








 <p>2 tens + 2 tens = 4 tens 20 + 20 = 40</p>	 <p>___ tens + ___ tens = ___ tens ___ + ___ = ___</p>
 <p>___ tens + ___ tens = ___ tens ___ + ___ = ___</p>	 <p>___ ten + ___ tens = ___ tens ___ + ___ = ___</p>
 <p>___ tens + ___ tens = ___ tens ___ + ___ = ___</p>	 <p>___ tens + ___ ten = ___ tens ___ + ___ = ___</p>

$20 + 10 = \square$	$\square = 20 + 40$
$40 + 20 = \square$	$40 + 30 = \square$
$70 + 10 = \square$	$80 + 10 = \square$
$80 + 0 = \square$	$\square = 50 + 10$
$0 + 40 = \square$	$60 + 20 = \square$
$70 + 20 = \square$	$70 + 0 = \square$
$40 + 10 = \square$	$0 + 10 = \square$
$30 + 40 = \square$	$10 + 50 = \square$
$40 + 40 = \square$	$20 + 20 = \square$
$40 + 30 = \square$	$\square = 40 + 10$
$10 + 0 = \square$	$\square = 30 + 30$
$20 + 70 = \square$	$30 + 60 = \square$
$10 + 10 = \square$	$90 + 0 = \square$

$\begin{array}{r} 50 \\ + 40 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ + 40 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ + 60 \\ \hline \end{array}$
$\begin{array}{r} 10 \\ + 40 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ + 80 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ + 70 \\ \hline \end{array}$
$\begin{array}{r} 20 \\ + 20 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ + 60 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ + 30 \\ \hline \end{array}$
$\begin{array}{r} 70 \\ + 10 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ + 50 \\ \hline \end{array}$	$\begin{array}{r} 60 \\ + 20 \\ \hline \end{array}$
$\begin{array}{r} 30 \\ + 0 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ + 10 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ + 10 \\ \hline \end{array}$
$\begin{array}{r} 50 \\ + 10 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ + 0 \\ \hline \end{array}$	$\begin{array}{r} 90 \\ + 0 \\ \hline \end{array}$

$\begin{array}{r} 21 \\ +33 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ +44 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ +66 \\ \hline \end{array}$
$\begin{array}{r} 32 \\ +46 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ +22 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ +21 \\ \hline \end{array}$
$\begin{array}{r} 42 \\ +25 \\ \hline \end{array}$	$\begin{array}{r} 47 \\ +31 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ +23 \\ \hline \end{array}$
$\begin{array}{r} 53 \\ +34 \\ \hline \end{array}$	$\begin{array}{r} 55 \\ +33 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ +21 \\ \hline \end{array}$
$\begin{array}{r} 67 \\ +21 \\ \hline \end{array}$	$\begin{array}{r} 62 \\ +35 \\ \hline \end{array}$	$\begin{array}{r} 66 \\ +12 \\ \hline \end{array}$
$\begin{array}{r} 71 \\ +23 \\ \hline \end{array}$	$\begin{array}{r} 73 \\ +12 \\ \hline \end{array}$	$\begin{array}{r} 76 \\ +12 \\ \hline \end{array}$

$20 + 18 = \square$	$20 + 22 = \square$
$18 + 21 = \square$	$22 + 24 = \square$
$26 + 22 = \square$	$34 + 24 = \square$
$\square = 35 + 22$	$\square = 36 + 13$
$\square = 41 + 33$	$\square = 47 + 11$
$\square = 25 + 20$	$32 + 24 = \square$
$63 + 21 = \square$	$\square = 23 + 64$
$68 + 11 = \square$	$72 + 0 = \square$
$\square = 6 + 73$	$75 + 14 = \square$
$31 + 7 = \square$	$\square = 0 + 81$
$66 + 21 = \square$	$25 + 34 = \square$
$\square = 77 + 22$	$57 + 42 = \square$
$63 + 36 = \square$	$\square = 31 + 68$

$20 + \square = 40$

$\square = 40 + 10$

$40 + \square = 50$

$30 + \square = 70$

$\square + 60 = 70$

$60 + \square = 90$

$20 + 30 = \square$

$\square + 50 = 80$

$50 + \square = 60$

$30 + 60 = \square$

$40 + \square = 80$

$\square + 10 = 30$

$20 + 50 = \square$

$20 + \square = 50$

$\square + 30 = 50$

$60 + \square = 80$

$\square + 10 = 40$

$50 + 10 = \square$

$30 + \square = 60$

$\square + 40 = 70$

$70 + 20 = \square$

$40 + \square = 60$

$\square + 20 = 80$

$30 + \square = 90$

$\square + 60 = 70$

$50 + 40 = \square$

$$(3+6)+1 = \square$$

$$3+(6+1) = \square$$

$$(4+6)+3 = \square$$

$$4+(6+3) = \square$$

$$(5+1)+0 = \square$$

$$5+(1+0) = \square$$

$$(2+0)+0 = \square$$

$$2+(0+0) = \square$$

$$(4+2)+2 = \square$$

$$4+(2+2) = \square$$

$$(4+3)+7 = \square$$

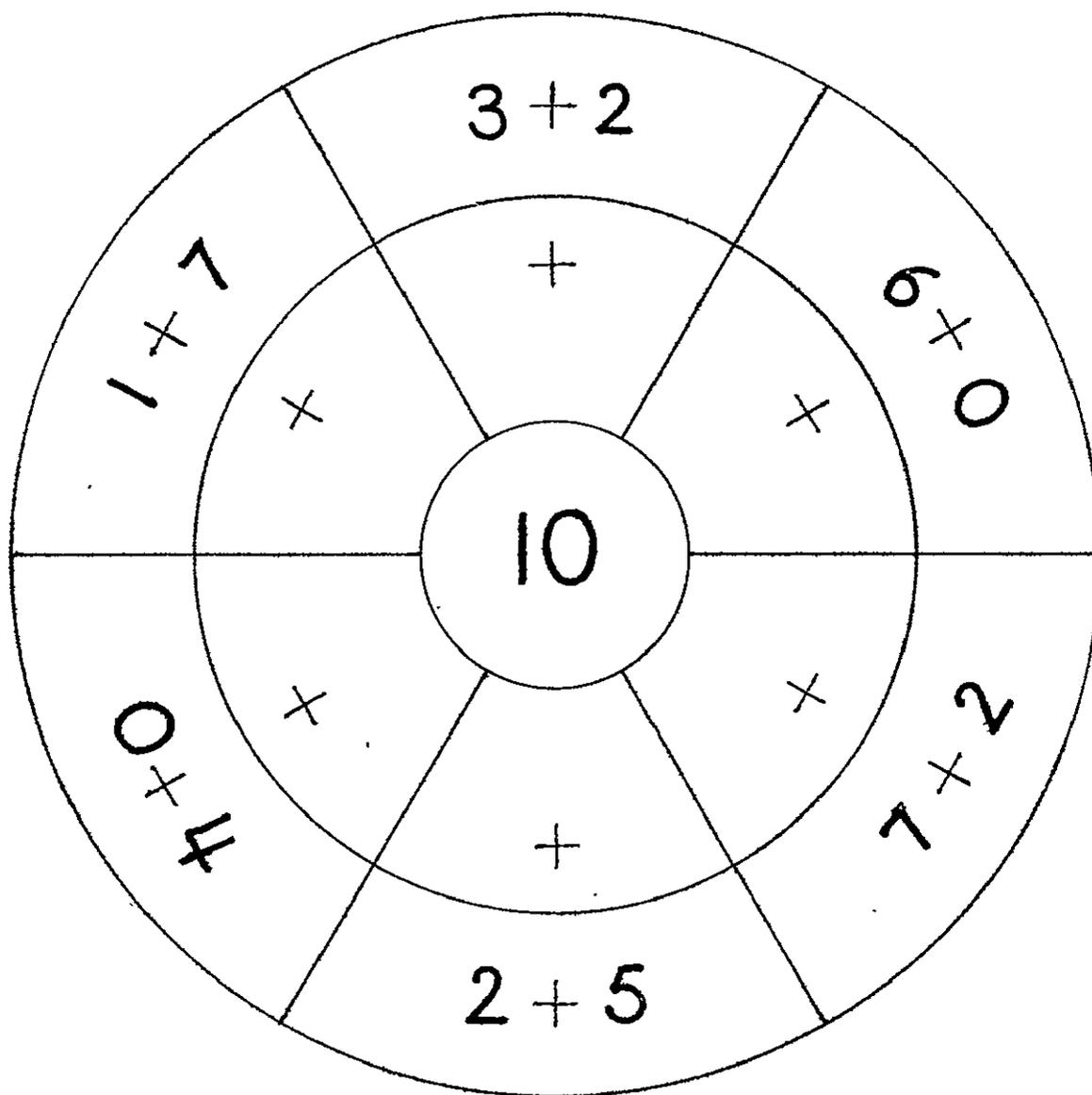
$$4+(3+7) = \square$$

$$(5+3)+2 = \square$$

$$5+(3+2) = \square$$

$$(9+1)+7 = \square$$

$$9+(1+7) = \square$$



$$(1 + 7) + 2 = \square = 1 + (7 + 2)$$

$$(3 + 2) + 5 = \square = 3 + (2 + 5)$$

$$(6 + 0) + 4 = \square = 6 + (0 + 4)$$

$$(6+2)+2 = \square + (2+2)$$

$$\square + 2 = \square + 4$$

$$(1+0)+7 = \square + (0+7)$$

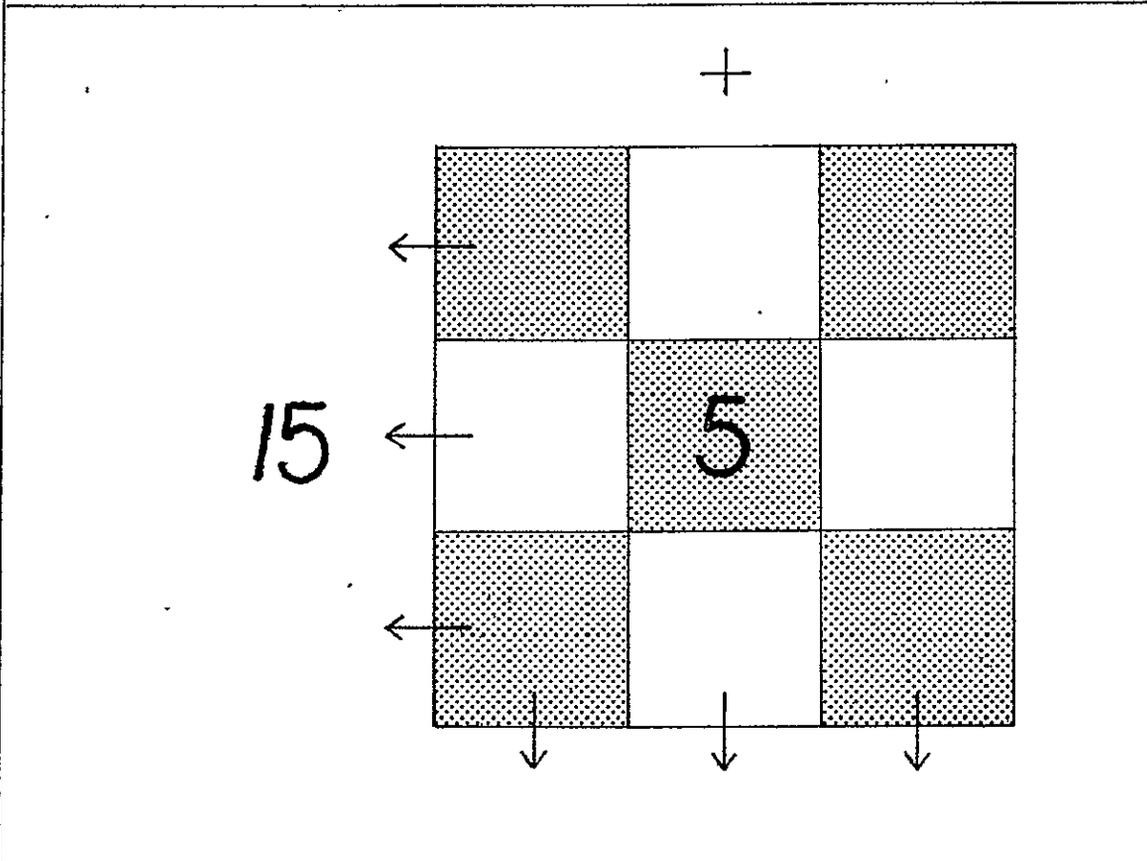
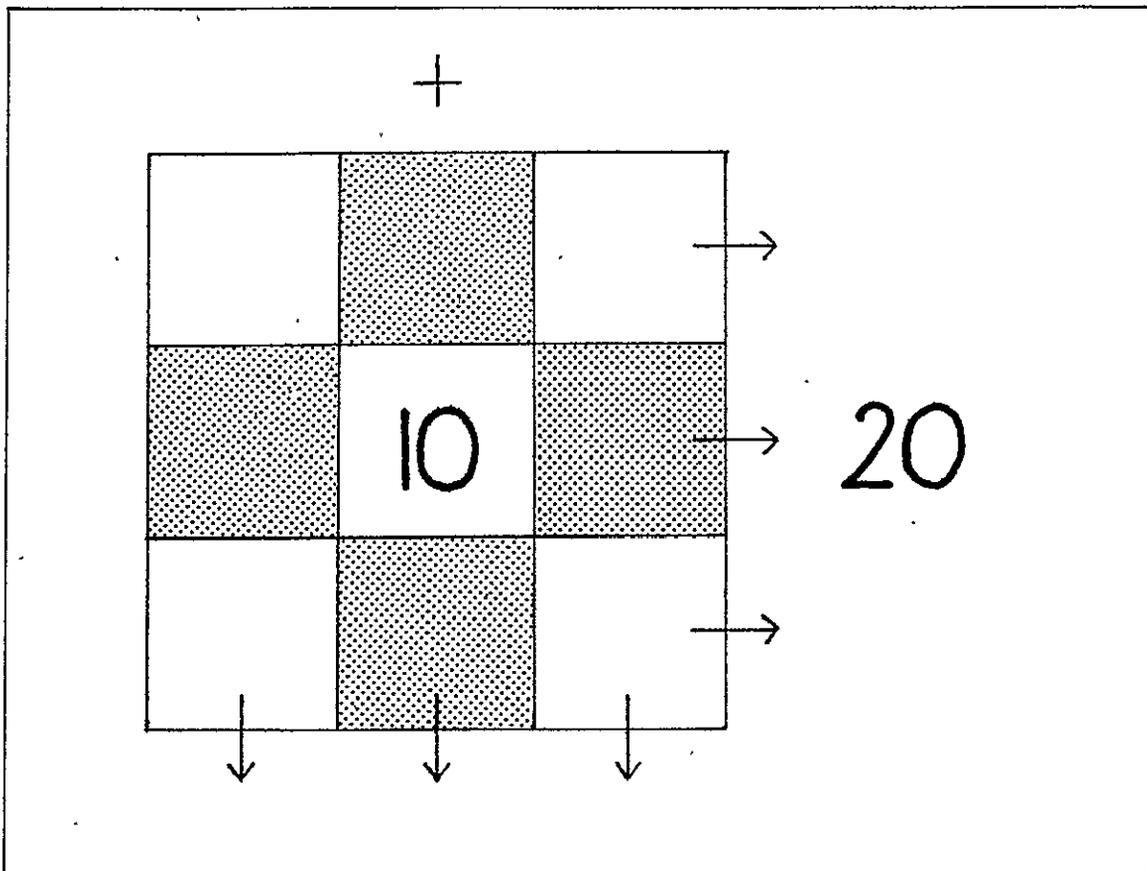
$$\square + 7 = \square + 7$$

$$(3+2)+4 = \square + (2+4)$$

$$\square + 4 = \square + 6$$

$$(5+1)+2 = \square + (1+2)$$

$$\square + 2 = \square + 3$$



30	10	20	40	30	50
20	40	10	10	20	20
<u>+40</u>	<u>+30</u>	<u>+50</u>	<u>+10</u>	<u>+10</u>	<u>+10</u>

20	30	40	30	40	30
20	30	40	10	0	20
<u>+30</u>	<u>+10</u>	<u>+10</u>	<u>+0</u>	<u>+30</u>	<u>+20</u>

10	60	10	30	10	50
30	20	50	50	60	20
<u>+20</u>	<u>+10</u>	<u>+10</u>	<u>+0</u>	<u>+0</u>	<u>+20</u>

$30 + 20 + 40 = \square$
 $40 + 10 + 30 = \square$
 $80 + 0 + 10 = \square$
 $70 + 10 + 10 = \square$

$\begin{array}{r} 10 \\ 18 \\ +40 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ 30 \\ +20 \\ \hline \end{array}$	$\begin{array}{r} 40 \\ 25 \\ +20 \\ \hline \end{array}$	$\begin{array}{r} 32 \\ 15 \\ +42 \\ \hline \end{array}$	$\begin{array}{r} 41 \\ 27 \\ +11 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ 21 \\ +42 \\ \hline \end{array}$
$\begin{array}{r} 50 \\ 17 \\ +20 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ 20 \\ +10 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ 30 \\ +12 \\ \hline \end{array}$	$\begin{array}{r} 53 \\ 14 \\ +11 \\ \hline \end{array}$	$\begin{array}{r} 63 \\ 12 \\ +24 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ 43 \\ +31 \\ \hline \end{array}$
$\begin{array}{r} 30 \\ 13 \\ +40 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ 20 \\ +33 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ 14 \\ +42 \\ \hline \end{array}$	$\begin{array}{r} 34 \\ 43 \\ +11 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ 63 \\ +12 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 22 \\ +31 \\ \hline \end{array}$
$\begin{array}{r} 24 \\ 10 \\ +53 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ 20 \\ +43 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ 23 \\ +30 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 42 \\ +32 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 12 \\ +11 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 41 \\ +31 \\ \hline \end{array}$

$7 + 3 + 6 = \square$

$5 + 9 + 1 = \square$

$3 + 6 + 4 = \square$

$8 + 2 + 4 = \square$

$6 + 10 + 10 = \square$

$9 + 10 + 20 = \square$

$12 + 8 + 2 = \square$

$10 + 25 + 0 = \square$

$7 + 20 + 20 = \square$

$9 + 1 + 8 = \square$

$5 + 5 + 7 + 3 = \square$

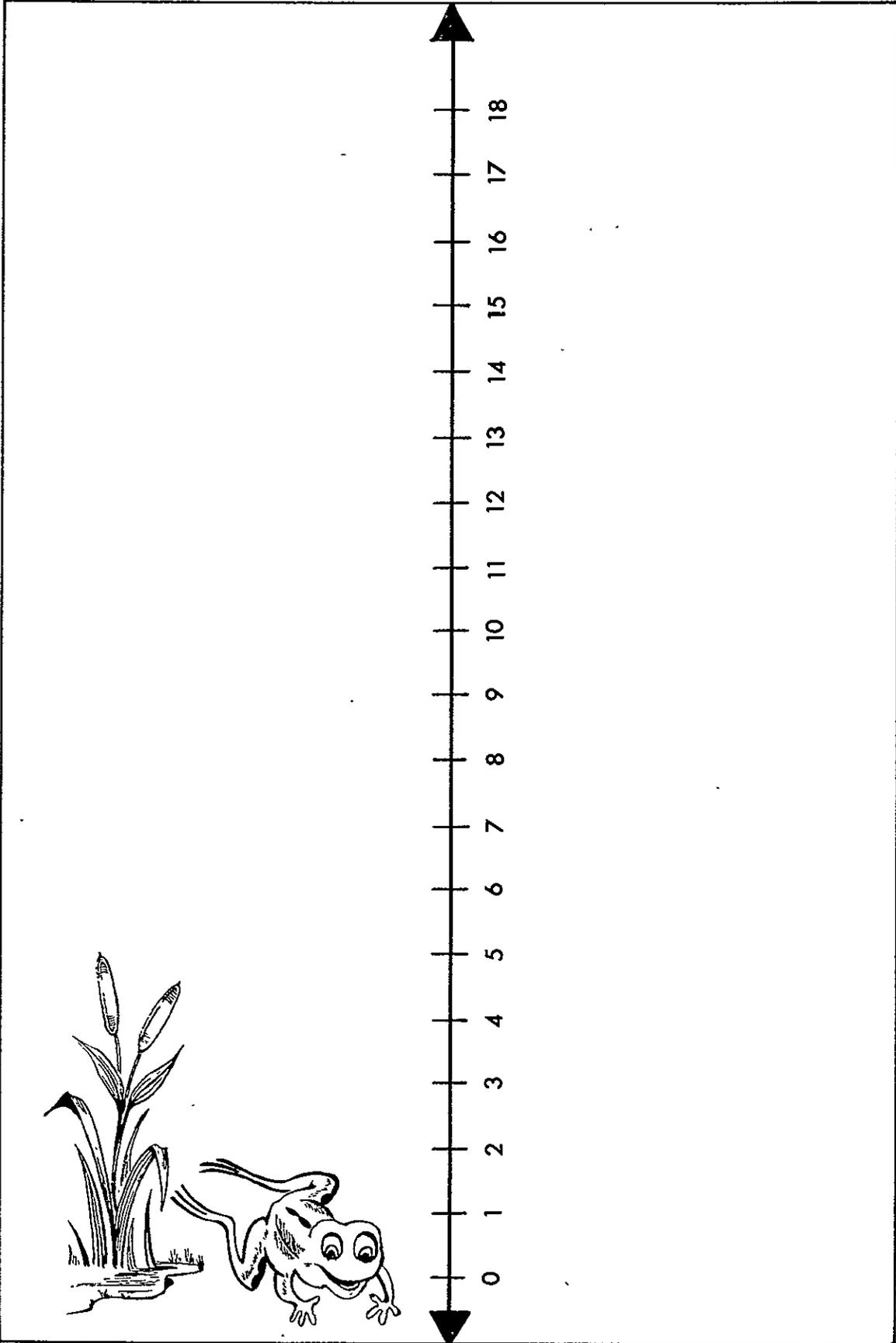
$4 + 2 + 6 + 4 = \square$

$5 + 6 + 4 + 5 = \square$

$\begin{array}{r} 2 \\ 5 \\ 3 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 6 \\ 2 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 3 \\ 2 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 23 \\ 11 \\ 32 \\ +13 \\ \hline \end{array}$	$\begin{array}{r} 62 \\ 10 \\ 14 \\ +12 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ 20 \\ 13 \\ +11 \\ \hline \end{array}$
$\begin{array}{r} 8 \\ 2 \\ 6 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 3 \\ 2 \\ +9 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 1 \\ 4 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ 32 \\ 14 \\ +21 \\ \hline \end{array}$	$\begin{array}{r} 31 \\ 23 \\ 14 \\ +11 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ 15 \\ 12 \\ +32 \\ \hline \end{array}$
$\begin{array}{r} 3 \\ 6 \\ 2 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 4 \\ 3 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 2 \\ 1 \\ +8 \\ \hline \end{array}$	$\begin{array}{r} 51 \\ 16 \\ 22 \\ +10 \\ \hline \end{array}$	$\begin{array}{r} 40 \\ 23 \\ 14 \\ +20 \\ \hline \end{array}$	$\begin{array}{r} 50 \\ 12 \\ 24 \\ +13 \\ \hline \end{array}$
$\begin{array}{r} 6 \\ 4 \\ 5 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 3 \\ 5 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 5 \\ 1 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ 42 \\ 11 \\ +15 \\ \hline \end{array}$	$\begin{array}{r} 32 \\ 20 \\ 13 \\ +12 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ 30 \\ 15 \\ +11 \\ \hline \end{array}$

= or \neq	Make true Sentences
$5 + 6 \text{ --- } 14$	$7 + 0 = \square$
$13 + 0 \text{ --- } 14$	$7 + 0 \neq \square$
$10 + 6 \text{ --- } 16$	$6 + 9 \neq \square + 6$
$(4 + 2) + 3 \text{ --- } 11$	$6 + 9 = \square + 6$
$3 + (2 + 5) \text{ --- } 10$	$20 + 40 \neq \square + 30$
$(4 + 6) + 6 \text{ --- } 16$	$20 + 40 = \square + 30$
$5 + 3 \text{ --- } 4 + 8$	$(3 + 7) + 5 = 3 + (7 + \square)$
$6 + 4 \text{ --- } 6 + 5$	$(3 + 7) + 5 \neq 3 + (7 + \square)$
$5 + 2 \text{ --- } 2 + 5$	$40 + 30 \neq \square$
$(2 + 3) + 1 \text{ --- } 2 + (3 + 1)$	$40 + 30 = \square$

=	<	>
$9+9$ ___ $9+8$	$(2+3)+6$ ___ 6	
$10+2$ ___ $6+6$	$9+(2+3)$ ___ 18	
$7+9$ ___ $9+7$	$5+(5+5)$ ___ 10	
$5+4$ ___ $10+0$	$(6+4)+2$ ___ 12	
$7+3$ ___ $5+5$	$(7+7)+1$ ___ 14	
$6+4$ ___ $6+5$	$(2+3)+2$ ___ 7	
$11+6$ ___ $11+5$	$10+(1+1)$ ___ 11	
$7+2$ ___ $7+0$	$14+2$ ___ $14+3$	
$9+0$ ___ $0+9$	$14+3$ ___ $13+3$	
$10+2$ ___ $10+5$	$16+0$ ___ $0+16$	



$$12 + m = 18$$

$$14 + 2 = y$$

$$(3 + m) + 2 = 8$$

$$40 + 20 = n$$

$$30 + a = 30$$

$$b + 6 = 16$$

$$n + 0 = 19$$

$$(5 + n) + 10 = 20$$

$$n + (7 + 3) = 17$$

$$y + 9 = 18$$

$$10 + 2 = a$$

$$15 + 5 = b$$

$$5 + (5 + 5) = n$$

$$4 + 2 = y + 4$$

$$5 + 0 = m + 4$$

$$6 + 3 = n + 8$$

$$7 + 3 = 5 + n$$

$$3 + 3 = 5 + y$$

$$1 + 10 = 10 + n$$

$$8 + 1 = 5 + m$$

$$7 + m = 3 + 4$$

$$6 + y = 7 + 3$$

$$0 + 4 = 4 + n$$



$$6 + n = 9$$

$$n = \square$$

$$20 + n = 30$$

$$n = \square$$

$$n + 7 = 15$$

$$n = \square$$

$$16 + 3 = n$$

$$n = \square$$

$$n + 10 = 19$$

$$n = \square$$

$$21 + 4 = n$$

$$n = \square$$

$$15 + n = 20$$

$$n = \square$$

$$n = 10 + 6$$

$$n = \square$$

$$n = 20 + 30$$

$$n = \square$$

$$15 + 10 = n$$

$$n = \square$$

$$7 + n = 18$$

$$n = \square$$

$$20 + n = 28$$

$$n = \square$$

$$n + 20 = 60$$

$$n = \square$$

$$n + 6 = 36$$

$$n = \square$$

$$32 + 34 = n$$

$$n = \square$$

$$25 + 41 = n$$

$$n = \square$$

STEERING COMMITTEE
AFRICAN EDUCATION PROGRAM

Chairman: Professor Jerrold R. Zacharias
Massachusetts Institute of Technology, Cambridge, Massachusetts

Professor William O. Brown
Boston University, Boston, Massachusetts

Professor Jerome S. Bruner
Harvard University, Cambridge, Massachusetts

Mr. Louis Cowan
Brandeis University, Waltham, Massachusetts

Professor Henry A. Gleason
Hartford Seminary Foundation, Hartford, Connecticut

Professor William Ted Martin
Massachusetts Institute of Technology, Cambridge, Massachusetts

Professor Elting E. Morison
Massachusetts Institute of Technology, Cambridge, Massachusetts

Professor Philip Morrison
Cornell University, Ithaca, New York

Mr. William E. Spaulding
Houghton-Mifflin Company, Boston, Massachusetts

Professor Charles Walcott
Harvard University, Cambridge, Massachusetts

Mr. Stephen White
Educational Services Incorporated, Watertown, Massachusetts

Ex Officio: Dr. James R. Killian, Jr., President
Educational Services Incorporated

Mr. Gilbert Oakley, Jr., Vice President
Educational Services Incorporated

MATHEMATICS STEERING COMMITTEE

AFRICAN EDUCATION PROGRAM

Chairman: Professor W. T. Martin
Massachusetts Institute of Technology, Cambridge, Massachusetts

Professor Edward Begle
Stanford University, Stanford, California

Professor David H. Blackwell
University of California, Berkeley, California

Professor Jerome S. Bruner
Harvard University, Cambridge, Massachusetts

Professor Robert B. Davis
Webster College, Webster Groves, Missouri

Professor Robert P. Dilworth
California Institute of Technology, Pasadena, California

Professor Roy Dubish
University of Washington, Seattle, Washington

Professor Vincent Haag
Franklin and Marshall College, Lancaster, Pennsylvania

Professor C. Frederick Mosteller
Harvard University, Cambridge, Massachusetts

Professor David Page
Educational Services Incorporated, Watertown, Massachusetts

Professor B. J. Pettis
University of North Carolina, Chapel Hill, North Carolina

Professor Walter Prenowitz
Brooklyn College, Brooklyn, New York

Professor Patrick Suppes
Stanford University, Stanford, California

Mr. Stephen White
Educational Services Incorporated, Watertown, Massachusetts

Professor Jerrold R. Zacharias
Massachusetts Institute of Technology, Cambridge, Massachusetts

Ex Officio:

- Dr. James R. Killian, Jr., President
Educational Services Incorporated, Watertown, Massachusetts
- Dr. Carroll Newsom, Chairman of the Executive Committee
Educational Services Incorporated, Watertown, Massachusetts

ENTEBBE MATHEMATICS WORKSHOPS

PARTICIPANTS AND OBSERVERS

Abbiw-Jackson, D., Kwame Nkrumah University of Science and Technology,
Mumasi, Ghana

Addy, Miss L. L., Achimota Primary School, Achimota, Accra, Ghana

Alele, Miss G., University of Ibadan, Ibadan, Western Nigeria

Ansre, G., University of Ghana, Legon, Accra, Ghana

Armar, T. Q., West Africa Secondary School, Accra, Ghana

Avinyia, B., Arua Teacher Training College, Arua, Uganda

Awokoya, L. T. M. A., Federal Emergency Science School, Lagos, Nigeria

Baldwin, R. B., Munali Secondary School, Lusaka, Northern Rhodesia

Bashraheil, M. A., Education Dept., Ministry of Education, Zanzibar

Belai, G., Ministry of Education, Addis Ababa, Ethiopia

Bender, M. L., Haile Selassie I University, Addis Ababa, Ethiopia

Bettie, J., Laboratory High School, University of Liberia, Monrovia, Liberia

Bezzabeh, A., Atse Yohannes Secondary School, Makalle, Tigre, Ethiopia
Blackwell, D., University of California, Berkeley, California
Bradley, H. P., Ministry of Education, Nairobi, Kenya
Brown, B. A., Ministry of Education, Accra, Ghana
Budd, C. J., Kyambogo Teacher Training College, Kampala, Uganda
Cole, S., Arua Teacher Training College, Kampala, Uganda
Collard, Mrs. K., University of Ibadan, Ibadan, Western Nigeria
Cronje, J. A., West African Examinations Council, Accra, Ghana
Crowe, D. W., University of Wisconsin, Madison, Wisconsin
Crowhurst, Miss M., Ministry of Education, Nairobi, Kenya
Deakin, J., Registrar, West African Examinations Council, Accra, Ghana
Dilworth, R. P., California Institute of Technology, Pasadena, California
Dowsett, J., Makerere College School, Kampala, Uganda
Dubisch, R., University of Washington, Seattle, Washington
Ellenberg, S., Columbia University, New York, New York
Ellis, W., Oberlin College, Oberlin, Ohio
Fakoya, D. A., Ministry of Education, Lagos, Nigeria
Finney, R. L., Princeton University, Princeton, New Jersey
Flemming, W., University of Ghana, Legon, Accra, Ghana
Garstens, Mrs. H., University of Maryland, College Park, Maryland
Gay, J. H., Cuttington College, Monrovia, Liberia
Gleason, H. A., Hartford Seminary Foundation, Hartford, Connecticut
Greene, Mrs. M., Annie Walsh Memorial School, Freetown, Sierra Leone
Haag, V., Franklin and Marshall College, Lancaster, Pennsylvania

Hamilton, E. W., State College of Iowa, Cedar Falls, Iowa

Harbottle, Mrs. M. C., Makerere College, Kampala, Uganda

Hardgrove, Mrs. C. E., Northern Illinois University, DeKalb, Illinois

Harding, F. B. D., Milton Margai Training College for Teachers, Goderich
Sierra Leone

Hill, Miss S. A., University of Missouri, Kansas City, Missouri

Hirama, J., U.S.A.I.D. Mission to Ghana, Accra, Ghana

Holland, Miss J. M., Ministry of Education, Nairobi, Kenya

Imohiosen, A. V., University of Ibadan, Ibadan, Western Nigeria

Jackson, J. S., University of Ghana, Legon, Accra, Ghana

Johnson, P. B., University of California, Los Angeles, California

Jonah, J. E., Prince of Wales School, Freetown, Sierra Leone

Junius, Miss H. V., Monrovia Demonstration School, Monrovia, Liberia

Kanina, Herbert J., Thika High School, Thika, Kenya

Kazembe, F. N., Ministry of Education, Blantyre, Nyasaland

Kharas, Miss K., Madison Project, Webster College, Webster Groves,
Missouri

Khasenye, J. R., Makerere College School, Kampala, Uganda

Khonje, S. G., Blantyre Secondary School, Blantyre, Nyasaland

Kimball, R., Kampala Technical Institute, Kampala, Uganda

Krouse, H. M., Center for Programmed Instruction, New York City, New York

Lappan, P., Lehigh University, Bethlehem, Pennsylvania

Laryea, E. B., West African Examinations Council, Accra, Ghana

Lewis, Miss E., University of Oklahoma, Norman, Oklahoma

Linyama, C. M., Mongu Secondary School, Mongu, Northern Rhodesia

Maina, Mrs. M. W., Gjakanja Secondary School, Nyeri, Kenya

Mathen, M. P., Senior Secondary School, Kampala, Uganda

Martin, W. T., Massachusetts Institute of Technology, Cambridge, Mass.

Max-Peters, T. B., Collegiate School, Freetown, Sierra Leone

McDermott, Miss M., Mt Diablo Unified School District, Concord, California

McLane, Miss L., Weston School System, Weston, Connecticut

Menkir, Y., Haile Selassie I University, Addis Ababa, Ethiopia

Merrick, P., Educational Services Incorporated, Watertown, Massachusetts

Modu, C. C., West African Examinations Council, Yaba, Nigeria

Mughogho, M. H., Ministry of Education, Lilongwe, Nyasaland

Mwajombe, R., Peramiho Teacher Training College, Peramiho, Songea, Tanganyika

Mwakalukwa, G. R., Uhuru Street School, Dar es Salaam, Tanganyika

Myers, S. S., Educational Testing Service, Princeton, New Jersey

Neville, Mrs. M. C., U.S.A.I.D., Lusaka, Northern Rhodesia

Ngalombi, E. M. K., Kampala Technical Institute, Kampala, Uganda

Oblitey, A., University of Ghana, Legon, Accra, Ghana

Obodai, G. T., Accra City Council Educational Unit, Accra, Ghana

Odunukwe, C., Federal Emergency Science School, Lagos, Nigeria

Offurum, R., Kings College, Lagos, Nigeria

Okello, L., Ministry of Education, Kampala, Uganda

Okine, J. K., Accra Academy, Accra, Ghana

Okon, J. J., Government Secondary School, Afikpo, Eastern Nigeria

Okosi, C. N., Government Secondary School, Owerri, Eastern Nigeria

Oyelese, J. O., University of Ibadan, Ibadan, Western Nigeria

Pettis, B. J., University of North Carolina, Chapel Hill, North Carolina

Polome, E. G. C., University of Texas, Austin, Texas

Prenowitz, W., Brooklyn College, Brooklyn, New York

Putnam, A. L., University of Chicago, Chicago, Illinois

Phythian, J. E., Makerere University College, Kampala, Uganda

Richmond, D. E., Williams College, Williamstown, Massachusetts

Riske, M., New Zealand House, London, England

Sambolah, E. S., College of West Africa, Monrovia, Liberia

Setidisho, N. O. H., Ministry of Education, Ndola, Northern Rhodesia

Shanks, M., Purdue University, Lafayette, Indiana

Smith, E. M. R., Fourah Bay College, Freetown, Sierra Leone

Soriyan, M. A., Government College, Ibadan, Western Nigeria

Sowden, Miss K. M., Whitelands College, University of London, Putney,
London, England

Sterling, N. J., Jr., Madison Project, Syracuse, New York

Swain, H., New Trier Township High School, Winnetka, Illinois

Swift, J. H., Alliance High School, Kikuyu, Kenya

Taylor-Pearce, J. E. M., Secondary Technical School, Freetown, Sierra Leone

Thomas, E. L., Charles Lwanga Teacher Training College, Chisekesi,
Northern Rhodesia

Ukeje, O., University of Nigeria, Nsukka, Eastern Nigeria

van Uden, Father C., Holy Ghost Teacher Training College, Morogoro, Tanganyika

Walsh, R. A., UNESCO, Makerere University College, Kampala, Uganda

Ward, Miss T., Cornell University, Ithaca, New York

Williams, A. D., Royal College, Nairobi, Kenya

Williamson, Miss I. B., Ministry of Education, Dar es Salaam, Tanganyika

Yafiy, H. Y., Secondary Technical School, Zanzibar

STAFF

Bender, Mrs. R. L., Addis Ababa, Ethiopia

Bodey, Miss Carol, Axim, Ghana

Bradley, Dermot, London, England

Coughlin, Miss Pat E., Jerusalem, Israel

Cummings, Miss Joan, New York City, New York (formerly E.S.I.)

D'Mello, Mrs. Helen, Entebbe, Uganda

Dyer, Mrs. Pauline, Seattle, Washington (formerly E.S.I.)

Knowles, Fred., Baltimore, Maryland

Martin, Seelye, Lexington, Massachusetts

Merrick, Mrs. Jane, Educational Services Incorporated, Watertown, Mass.

Morse, Miss Barbara A, Educational Services Incorporated, Watertown, Mass.

Morse, Miss Mary E., San Francisco, California

Smith, Colin J., Bexley Heath, Kent, England

Thomas, Mrs. Pat., Chisekesi, Northern Rhodesia