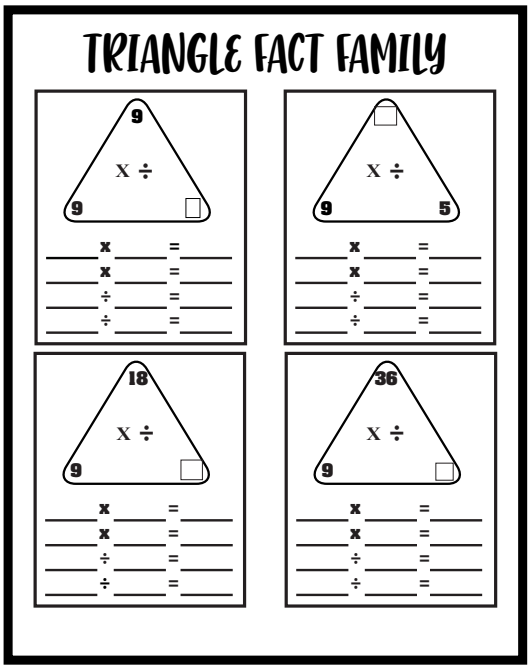
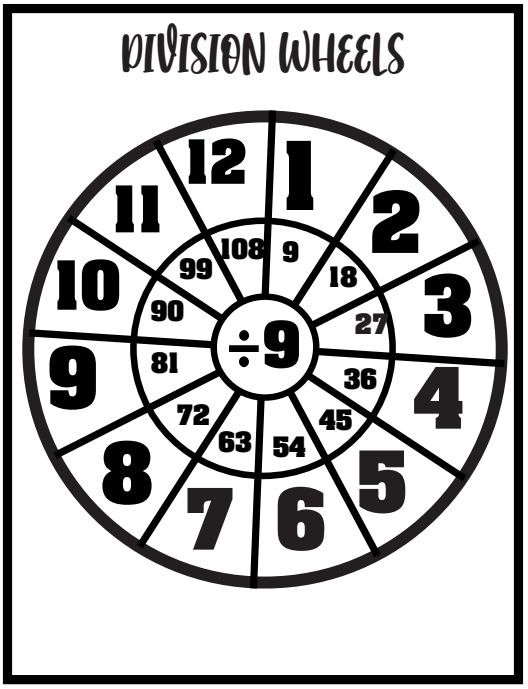
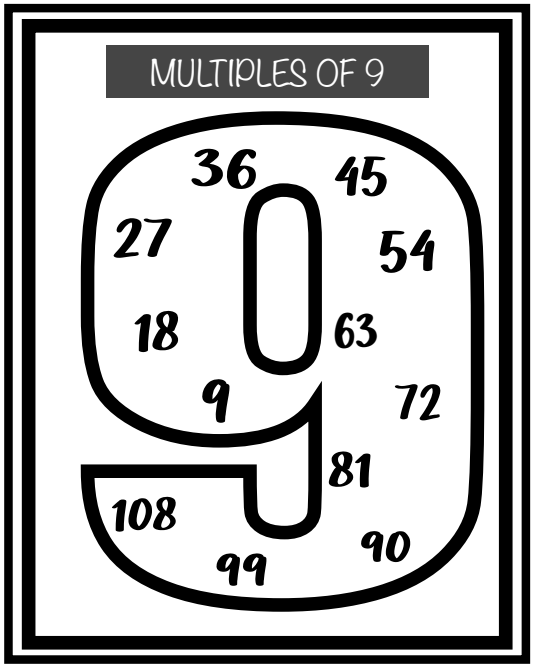
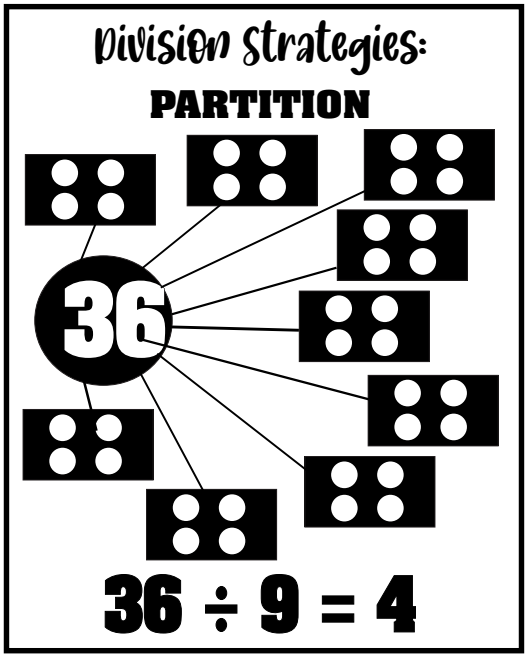
DIVIDING by 9

WORK BOOKLET ANSWER KEY





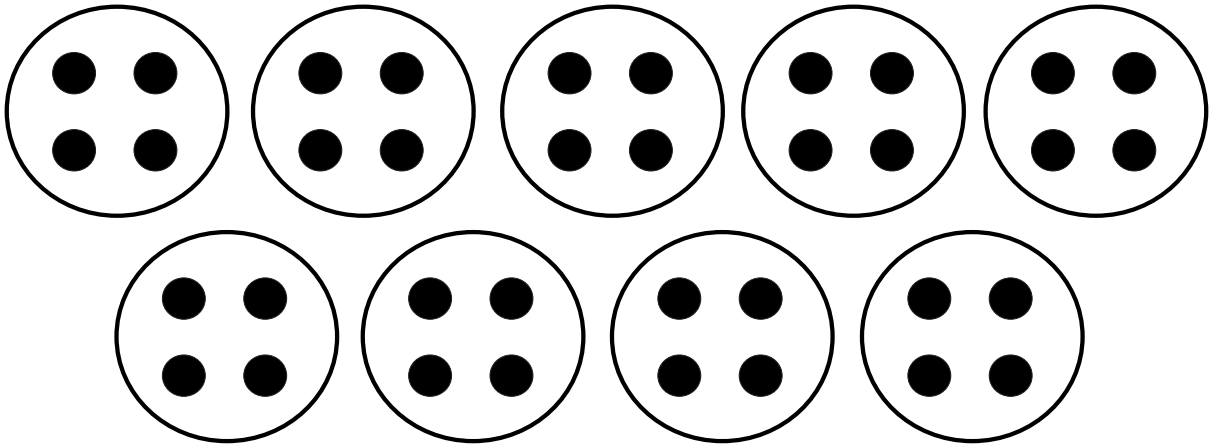




STRATEGY POSTER

When dividing by 9, think multiplication! 9 x ? =

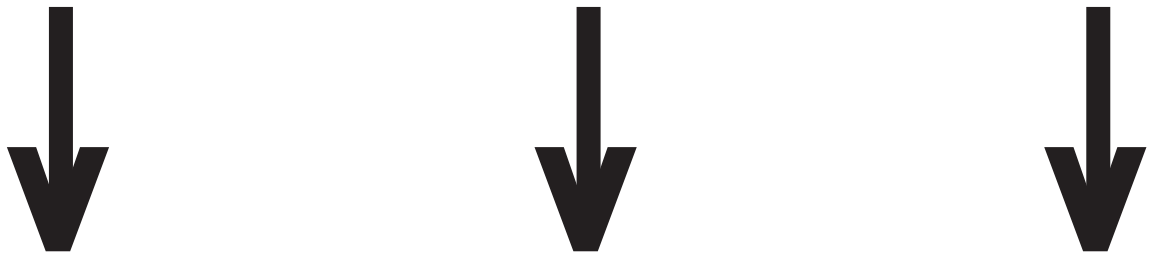
36 ÷ 9 = 4



Hint: Think multiplication! 9 x ? = 36

DIVISION

$$72 \div 9 = 8$$



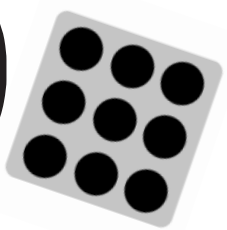
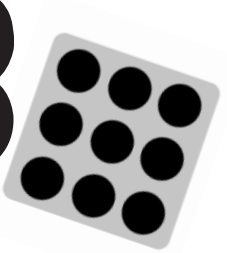
DIVIDEND DIVISOR QUOTIENT

MULTIPLES OF NINE

9  18  27 

36  45  54 

63  72  81 

90  99  108 

MULTIPLES OF NINE

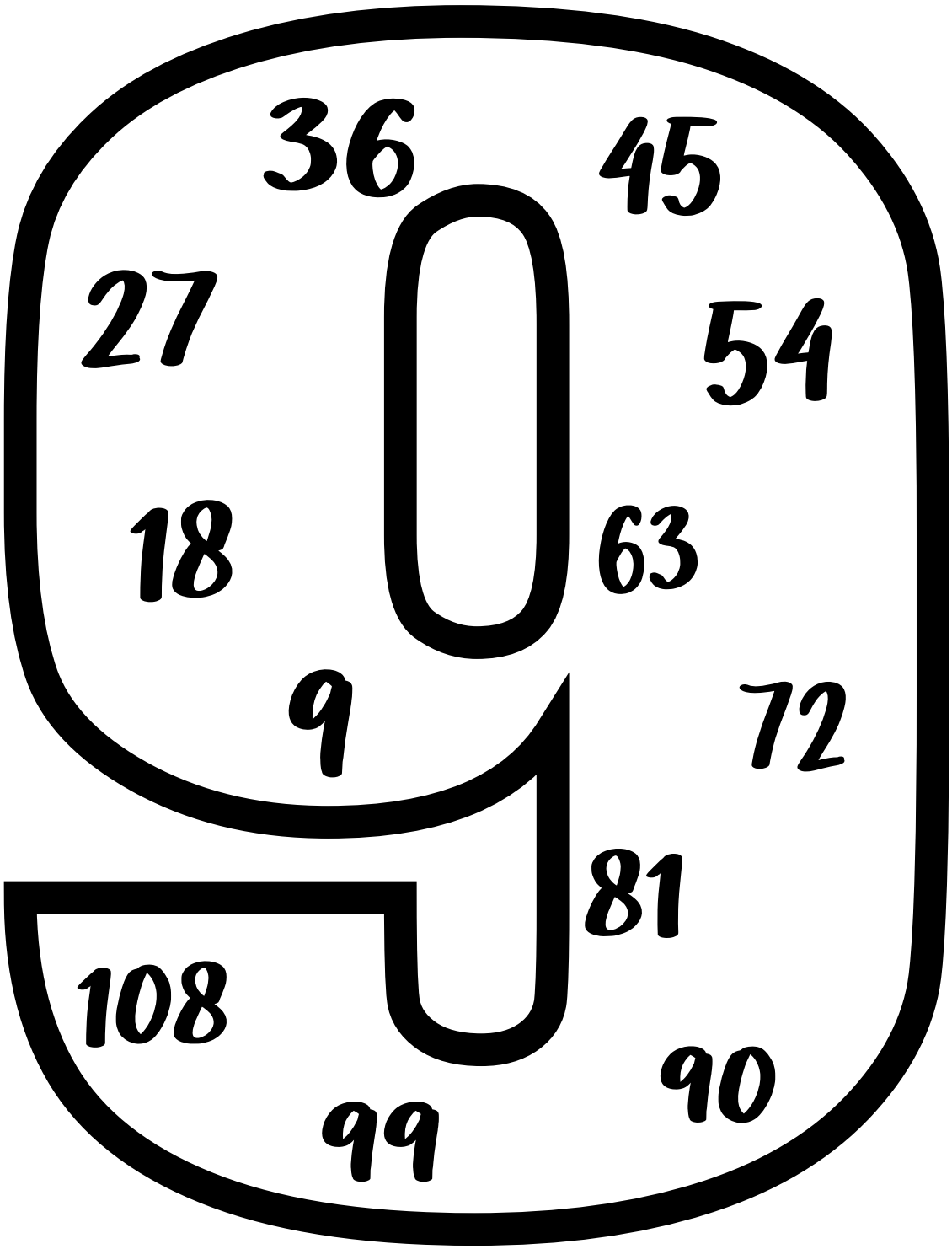
9 ○ 18 ○ 27 ○

36 ○ 45 ○ 54 ○

63 ○ 72 ○ 81 ○

90 ○ 99 ○ 108 ○

MULTIPLES OF 9



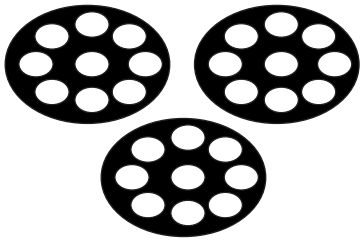
VOCABULARY

DISTRIBUTIVE PR OPERTY

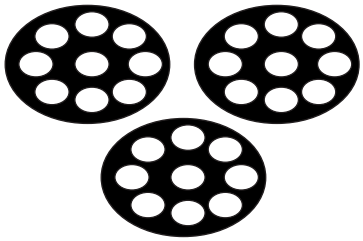
There were 54 marbles. I put 9 in each bag. How many bags did I use?

54 ÷ 9 = (27 ÷ 9) + (27 ÷ 9) = 3 + 3 = 6

54÷ 9



27 ÷ 9



27 ÷ 9

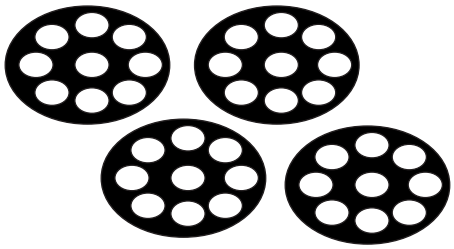
3 + 3 = 6

MODEL THE FACT

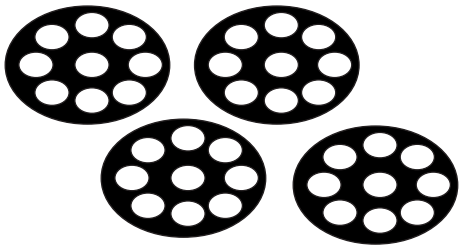
There were 72 marbles. I put 9 in each bag. How many bags did I use?

72 ÷ 9 = (36 ÷ 9) + (36 ÷ 9) = 4 + 4 = 8

72 ÷ 9



36 ÷ 9



36 ÷ 9

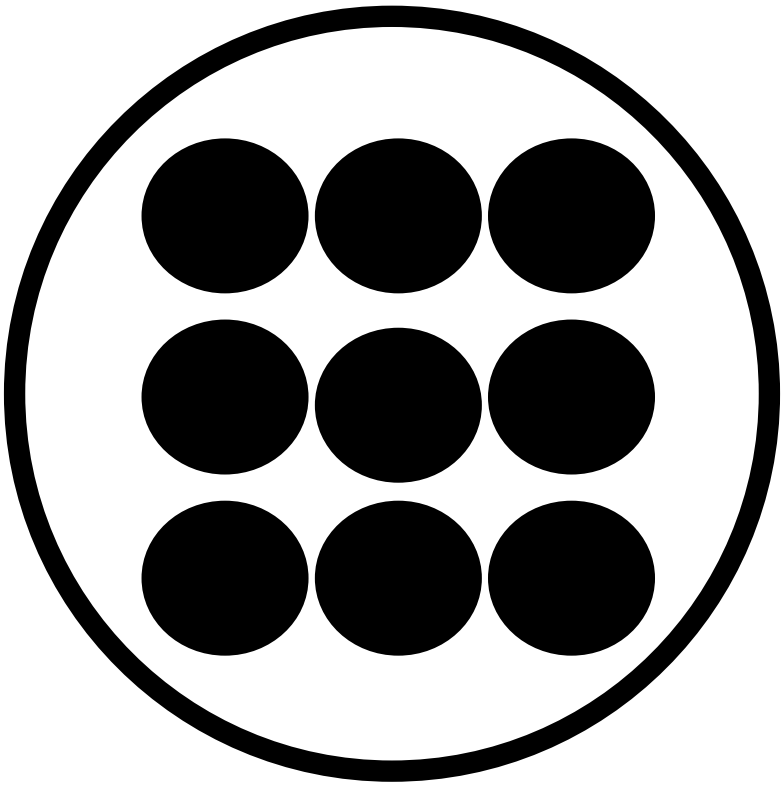
4 + 4 = 8

IDENTITY PROPERTY

DIVIDING A NUMBER BY 1

$$9 \div 1 = 9$$

$10 \div 1$ $5 \div 1$ $7 \div 1$



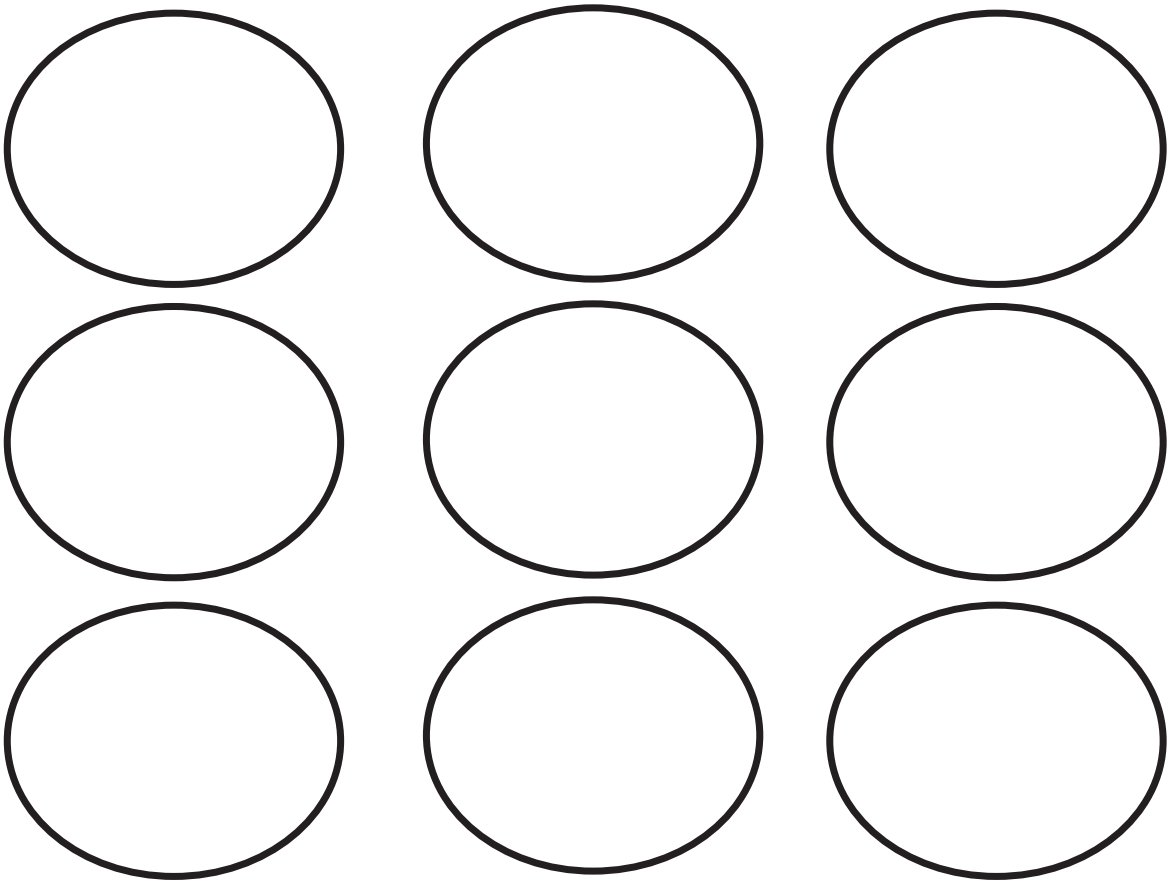
Hint : It's always the number when you divide by 1.

ZERO PROPERTY

DIVIDING 0 BY A NUMBER

$$0 \div 9 = 0$$

$0 \div 7$ $0 \div 1$ $0 \div 2$



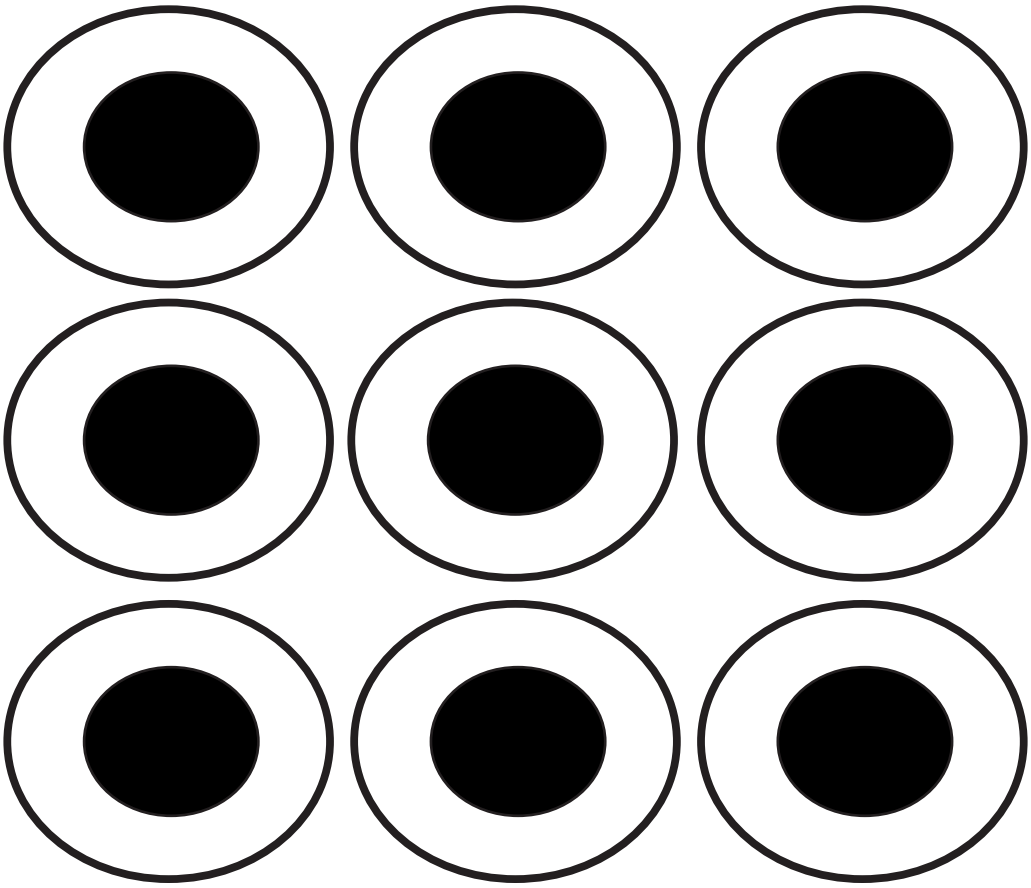
Hint: It's always 0 when you divide zero by a number.

DIVISION BY ITSELF PROPERTY

DIVIDING A NUMBER BY ITSELF

$$9 \div 9 = 1$$

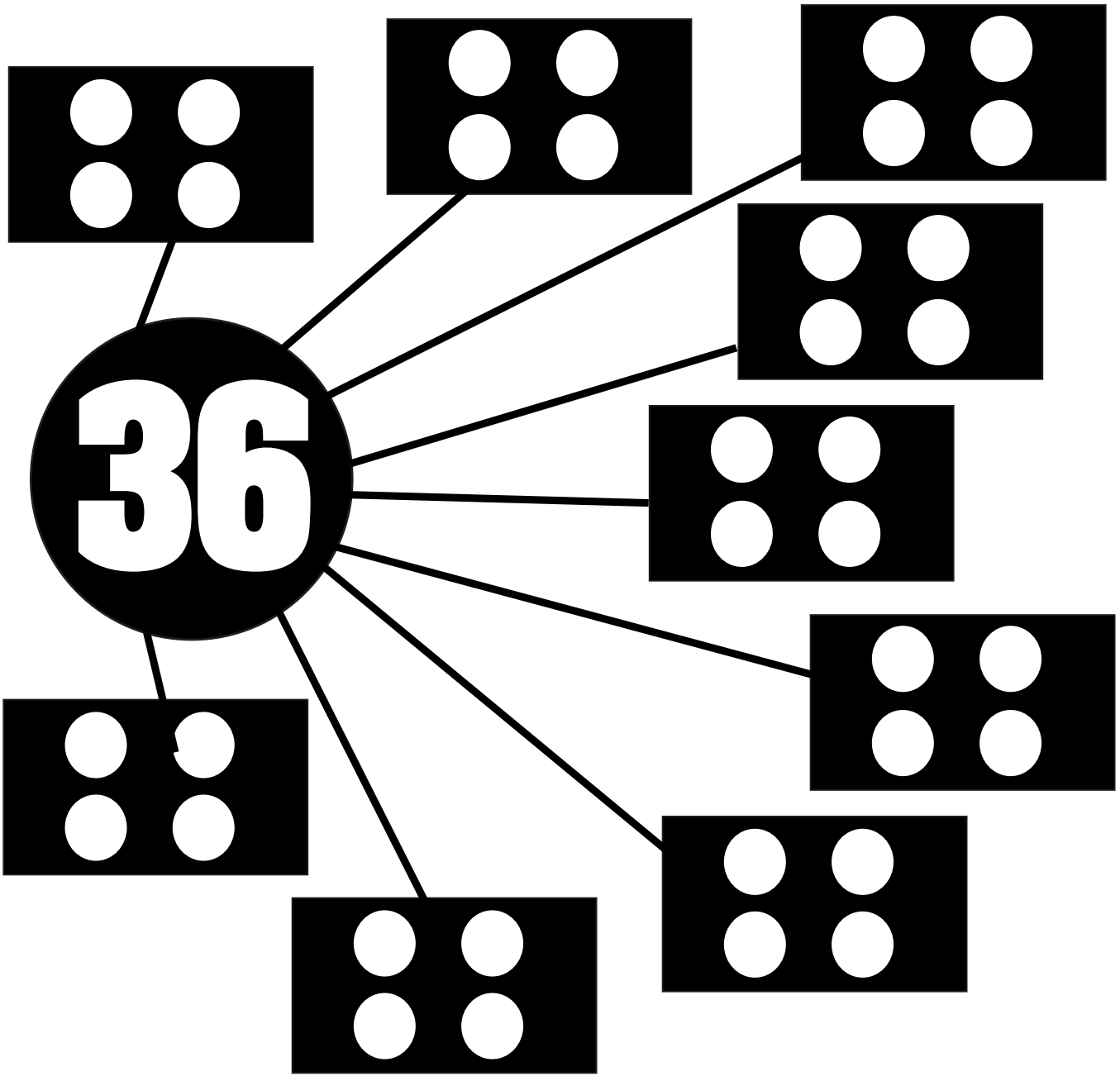
$10 \div 10$ $5 \div 5$ $2 \div 2$



Hint : It's always 1 when you divide a number by itself.

Division Strategies:

PARTITION

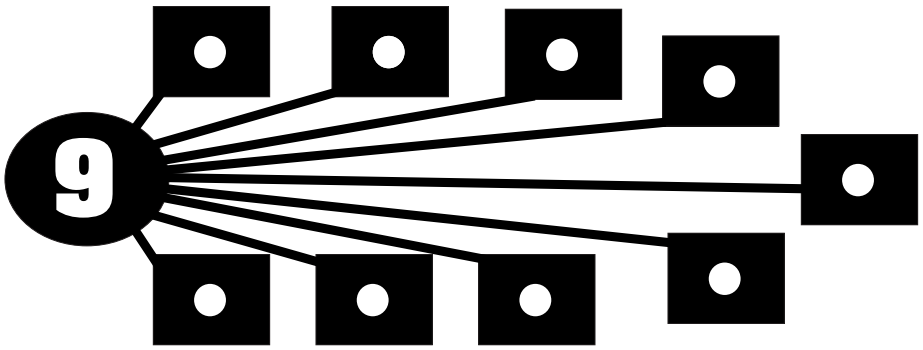


36 ÷ 9 = 4

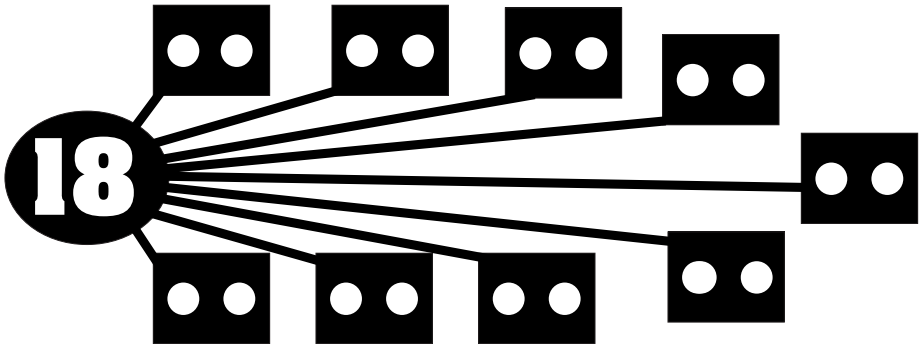
Division Strategies:

PARTITION

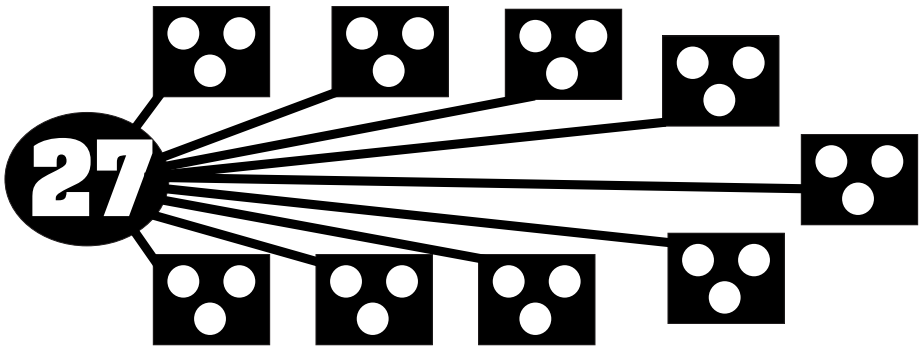
$9 \div 9 = 1$



$18 \div 9 = 2$



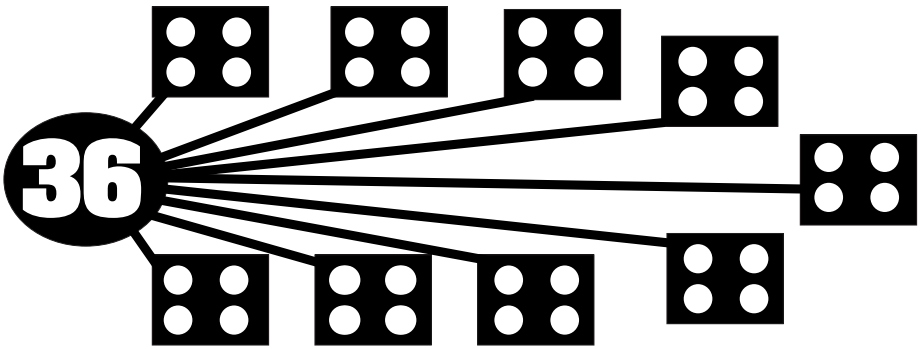
$27 \div 9 = 3$



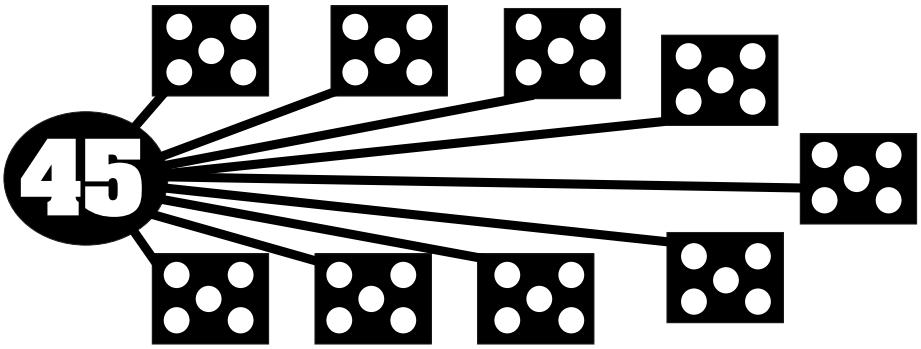
Division Strategies:

PARTITION

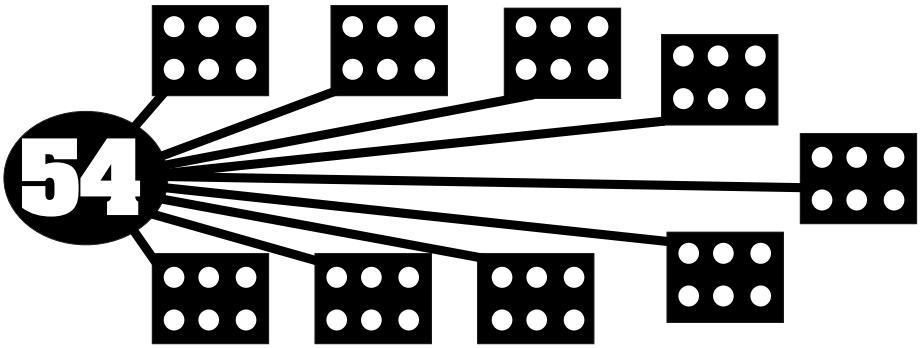
36 ÷ 9 = 4



45 ÷ 9 = 5



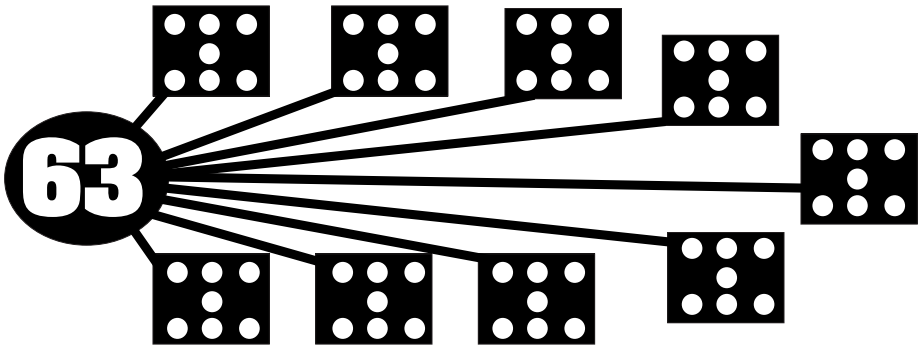
54 ÷ 9 = 6



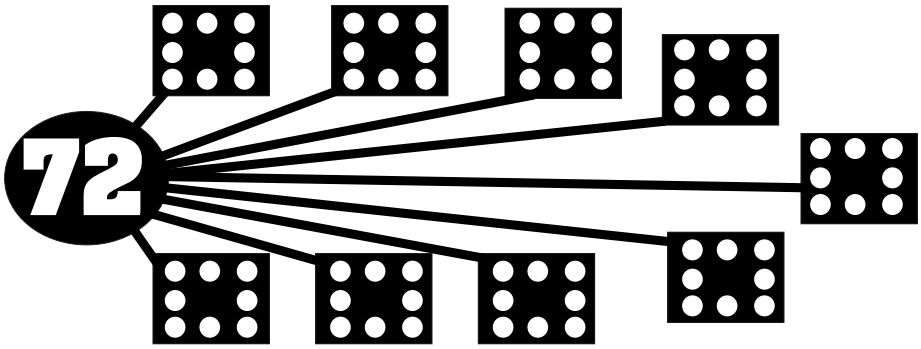
Division Strategies:

PARTITION

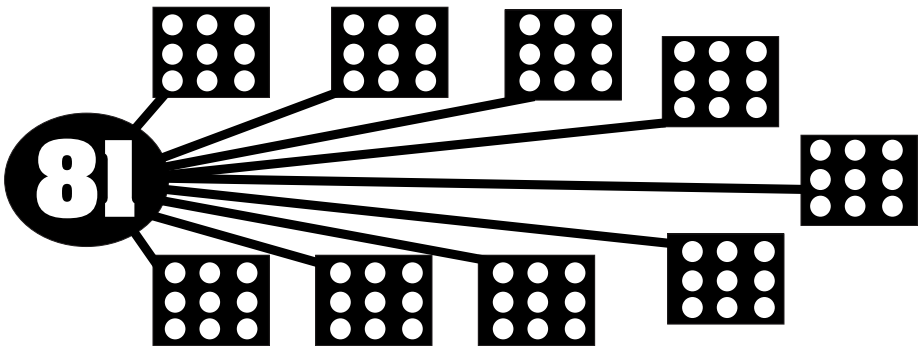
63 ÷ 9 = 7



72 ÷ 9 = 8



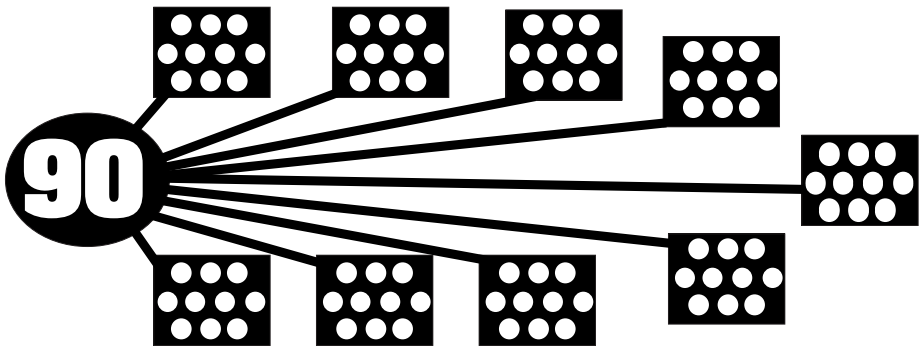
81 ÷ 9 = 9



Division Strategies:

PARTITION

90 ÷ 9 = 10



FREE CHOICE

FREE CHOICE

Division Strategies:

RELATED FACT

54 ÷ 9 = 6

think

9 x 6 = 54

9 ÷ 9 = 1

think

9 x 1 = 9

72 ÷ 9 = 8

think

9 x 8 = 72

81 ÷ 9 = 9

think

9 x 9 = 81

Division Strategies:

RELATED FACT

18 ÷ 9 = 2

think

9 x 2 = 18

36 ÷ 9 = 4

think

9 x 4 = 36

27 ÷ 9 = 3

think

9 x 3 = 27

45 ÷ 9 = 5

think

9 x 5 = 45

Division Strategies:

RELATED FACT

90 ÷ 9 = 10

think

9 x 10 = 90

63 ÷ 9 = 7

think

9 x 7 = 63

__ ÷ __ = __

think

__ x __ = __

__ ÷ __ = __

think

__ x __ = __

Division Strategies:

REPEATED SUBTRACTION

54 ÷ 9 = ?

54 - 9 = 45

45 - 9 = 36

36 - 9 = 27

27 - 9 = 18

18 - 9 = 9

9 - 9 = 0

54 ÷ 9 = 6

Division Strategies:
REPEATED SUBTRACTION

54 ÷ 9 = ?

54 - 9 = 45
45 - 9 = 36
36 - 9 = 27
27 - 9 = 18
18 - 9 = 9
9 - 9 = 0

54 ÷ 9 = 6

Division Strategies:

REPEATED SUBTRACTION

63 ÷ 9 = ?

63 - 9 = 54
54 - 9 = 45
45 - 9 = 36
36 - 9 = 27
27 - 9 = 18
18 - 9 = 9
9 - 9 = 0

63 ÷ 9 = 7

Division Strategies:
REPEATED SUBTRACTION

45 ÷ 9 = ?

45 - 9 = 36
36 - 9 = 27
27 - 9 = 18
18 - 9 = 9
9 - 9 = 0

45 ÷ 9 = 5

Division Strategies:

REPEATED SUBTRACTION

72 ÷ 9 = ?

$$72 - \underline{9} = 63$$
$$63 - \underline{9} = 54$$
$$54 - \underline{9} = 45$$
$$\underline{45} - 9 = 36$$
$$\underline{36} - 9 = 27$$
$$27 - \underline{9} = 18$$
$$18 - \underline{9} = 9$$
$$\underline{9} - 9 = 0$$

72 ÷ 9 = $\boxed{8}$

Division Strategies:

REPEATED SUBTRACTION

90 ÷ 9 = ?

90 - 9 = 81
81 - 9 = 72
72 - 9 = 63
63 - 9 = 54
54 - 9 = 45
45 - 9 = 36
36 - 9 = 27
27 - 9 = 18
18 - 9 = 9
9 - 9 = 0

90 ÷ 9 = 10

Modeling Division:
SKIP COUNTING

DRAW ON A NUMBER LINE

9 18 27 36 45 54 63 72 81 90

9 18 27 36 45 54 63 72 81 90

FILL IN THE MISSING NUMBERS

9	18	27	36	45	54	63	72	81	90

9	18	27	36	45	54	63	72	81	90

Modeling Division:
SKIP COUNTING

FILL IN THE MISSING NUMBERS

9	18	27	36	45	54	63	72	81	90

FILL IN THE MISSING NUMBERS

9	18	27	36	45	54	63	72	81	90

FILL IN THE MISSING NUMBERS

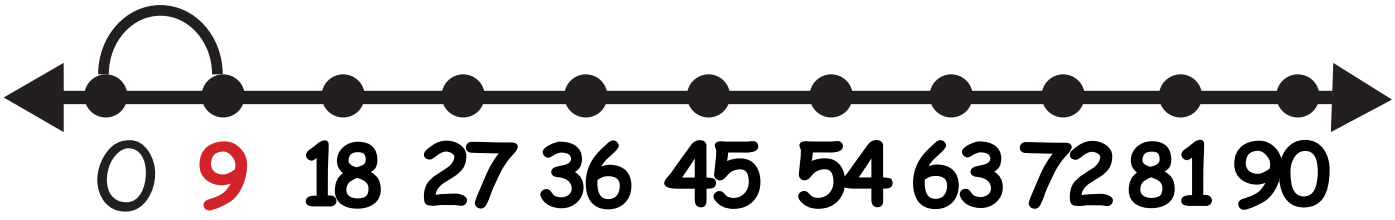
9	18	27	36	45	54	63	72	81	90

FILL IN THE MISSING NUMBERS

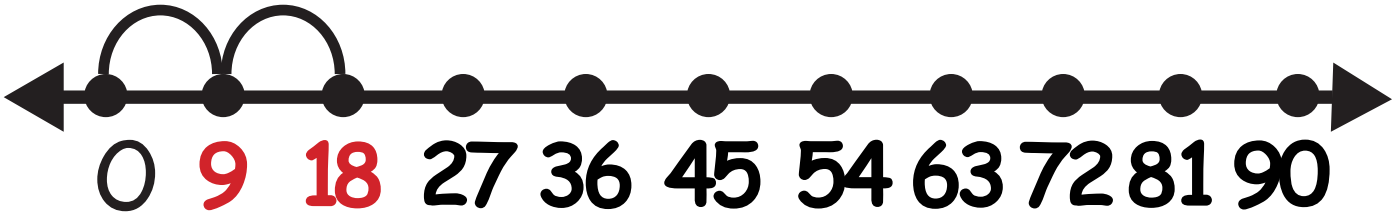
9	18	27	36	45	54	63	72	81	90

Division Strategies:
SKIP COUNTING

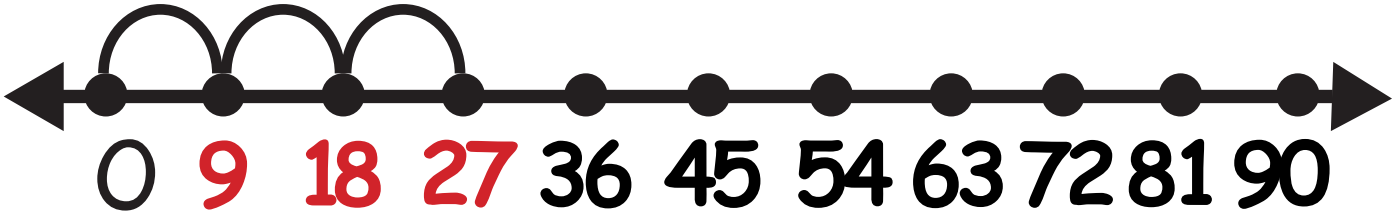
MODEL 9 ÷ 9 ON THE NUMBER LINE



MODEL 18 ÷ 9 ON THE NUMBER LINE

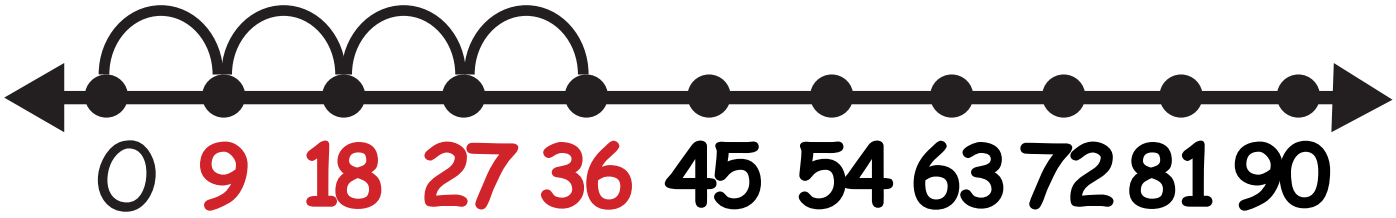


MODEL 27 ÷ 9 ON THE NUMBER LINE

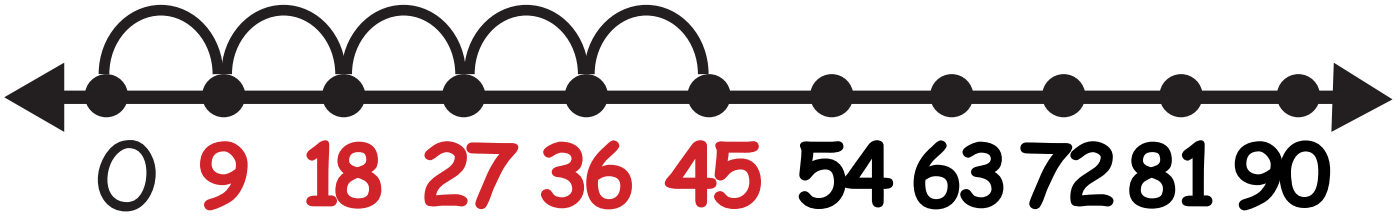


Division Strategies:
SKIP COUNTING

MODEL 36 ÷ 9 ON THE NUMBER LINE

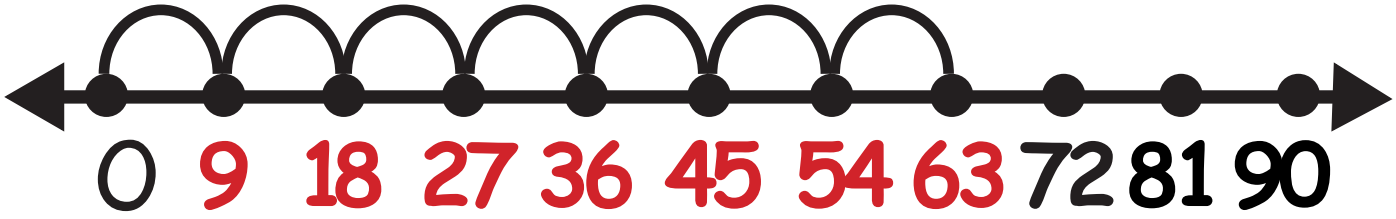


MODEL 45 ÷ 9 ON THE NUMBER LINE



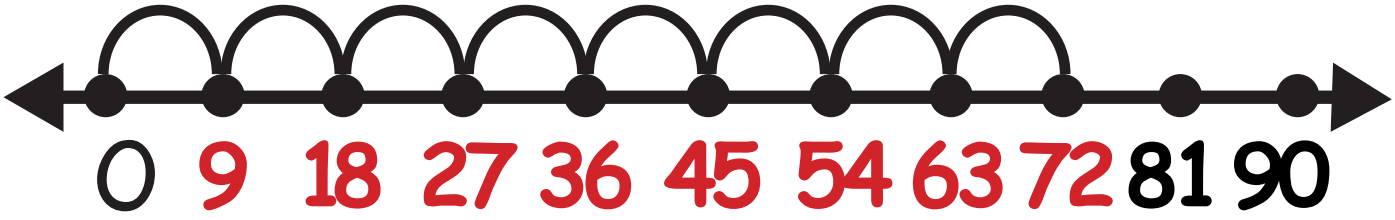
MODEL 54 ÷ 9 ON THE NUMBER LINE

MODEL 63 ÷ 9 ON THE NUMBER LINE



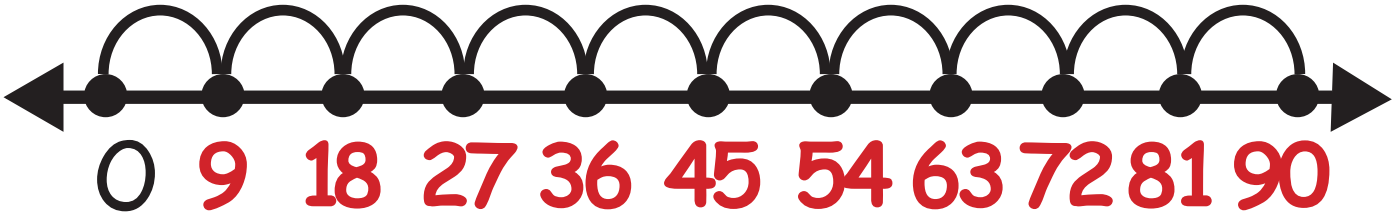
Division Strategies:
SKIP COUNTING

MODEL 72 ÷ 9 ON THE NUMBER LINE



MODEL 81 ÷ 9 ON THE NUMBER LINE

MODEL 90 ÷ 9 ON THE NUMBER LINE



Division Strategies:

NUMBER LINES

THERE ARE 18 COOKIES AND YOU PUT 9 IN A BAG. HOW MANY BAGS DO YOU HAVE?

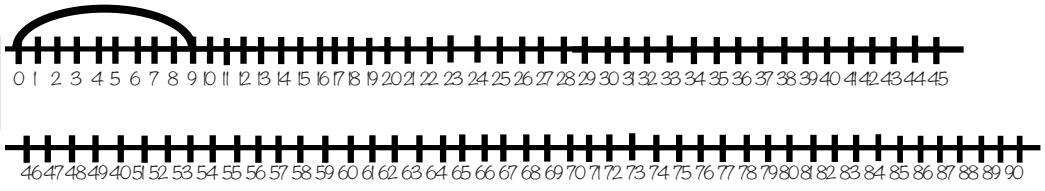
18 ÷ 9 = 2

HOW MANY JUMPS UNTIL YOU GET TO ZERO?

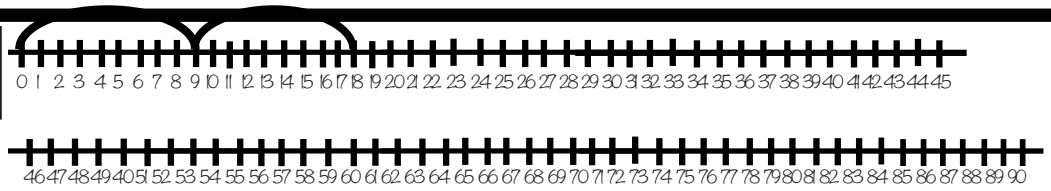
THE FIRST NUMBER IS HOW MANY COOKIES (DIVIDEND). THE SECOND NUMBER IS HOW MANY ARE IN A BAG (DIVISOR). THE QUESTION IS HOW MANY BAGS DO YOU NEED (QUOTIENT)?

SOLVE THE PROBLEM ON THE NUMBER LINE.
HOW MANY JUMPS UNTIL YOU GET TO ZERO?

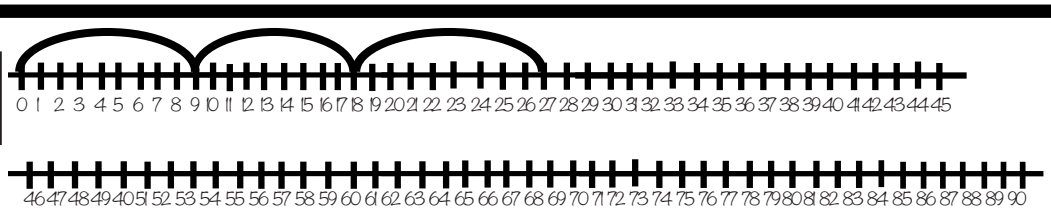
9 ÷ 9



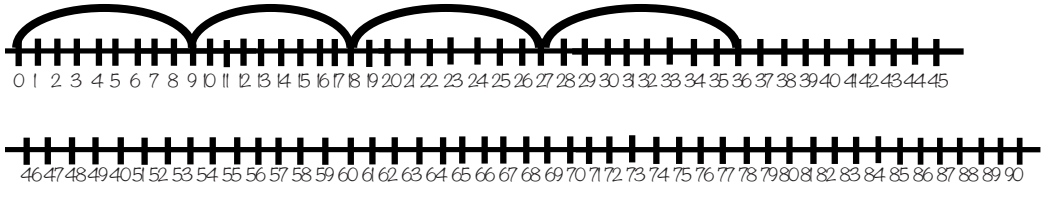
18 ÷ 9



27 ÷ 9



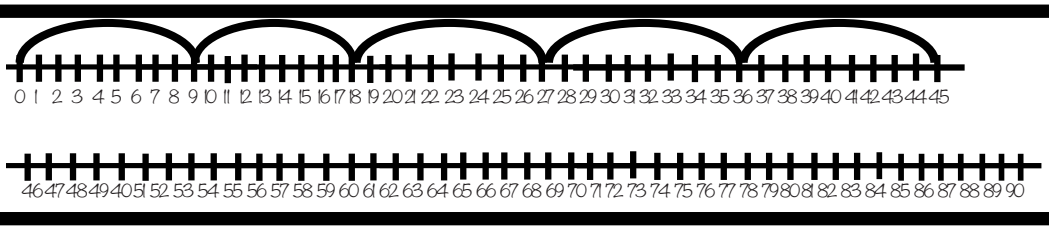
36 ÷ 9



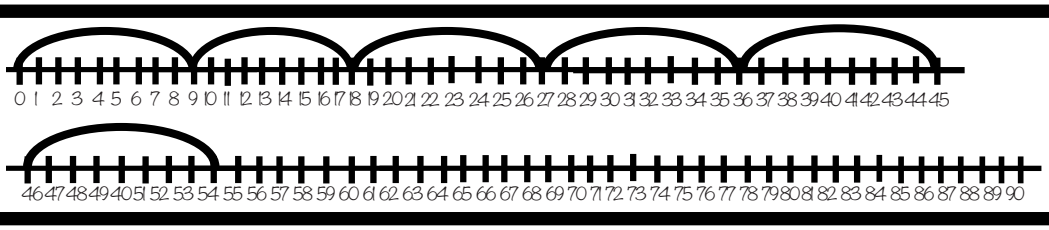
Division Strategies:

NUMBER LINES

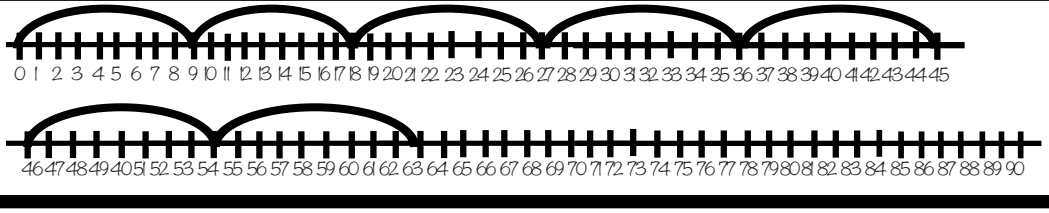
45 ÷ 9



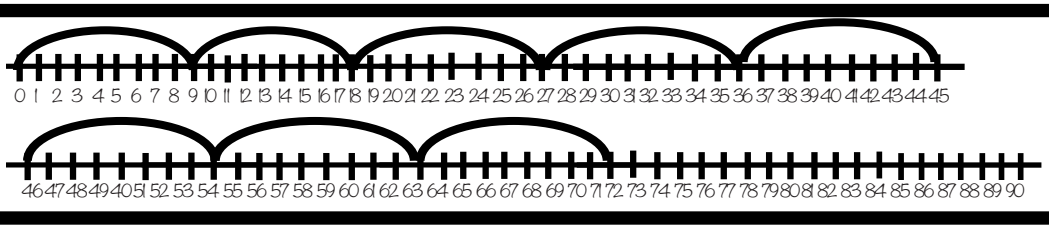
54 ÷ 9



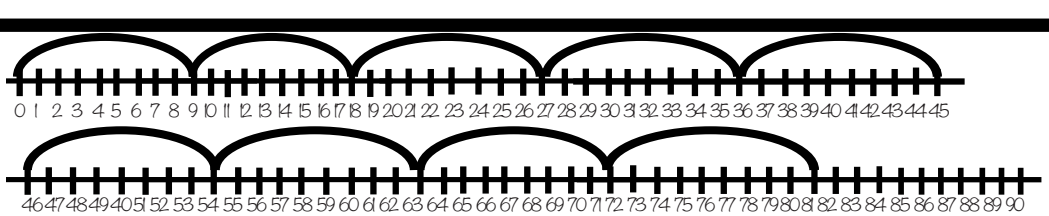
63 ÷ 9



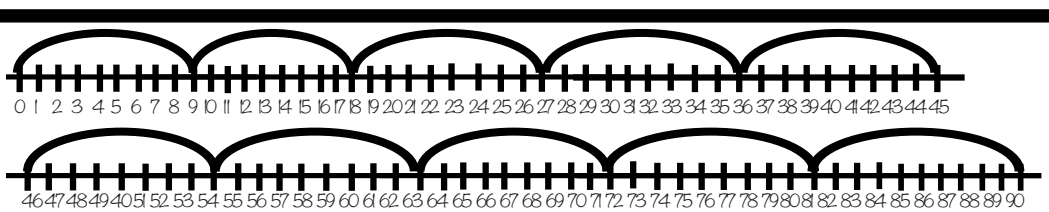
72 ÷ 9



81 ÷ 9



90 ÷ 9



Division Strategies:
SKIP COUNTING CHART

9	54
18	63
27	72
36	81
45	90

Division Vocabulary

dividend **divisor** **quotient**

$$63 \div 9 = 7$$

quotient **7**

divisor $9 \overline{)63}$ **dividend**

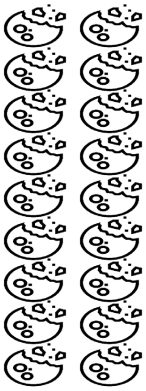
dividend $\frac{63}{9} = 7$ **quotient**

divisor

Array Flashcards

USE THE MODEL TO SOLVE

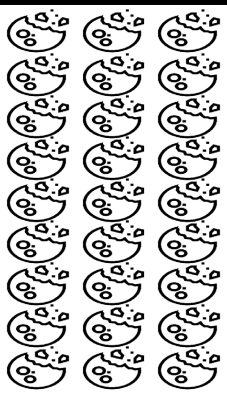
$9 \div 9 = \underline{1}$



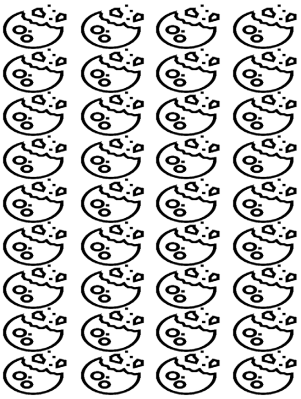
$18 \div 9 = \underline{2}$

Array Flashcards

USE THE MODEL TO SOLVE



27 ÷ 9 = 3



36 ÷ 9 = 4

Array Flashcards

USE THE MODEL TO SOLVE

45 ÷ 9 = 5

54 ÷ 9 = 6

Array Flashcards

USE THE MODEL TO SOLVE

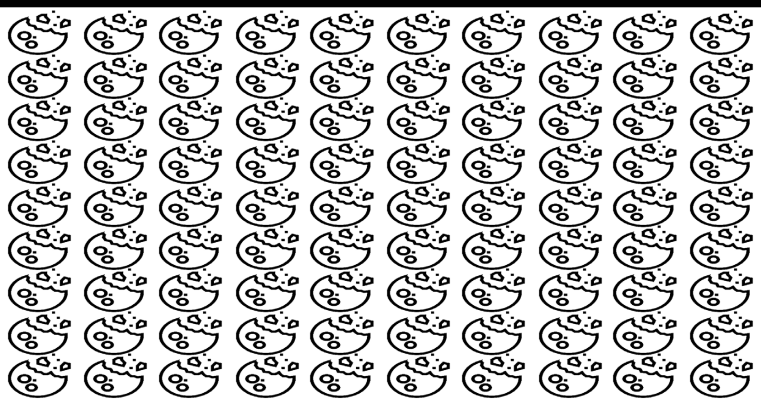
63 ÷ 9 = 7

72 ÷ 9 = 8

Array Flashcards

USE THE MODEL TO SOLVE

81 ÷ 9 = 9



90 ÷ 9 = 10

Array Flashcards

WRITE AN EQUATION THAT MATCHES THE ARRAY.

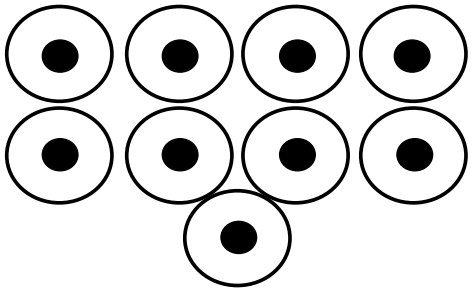
FREE CHOICE

FREE CHOICE

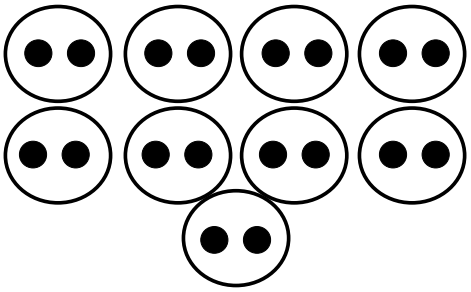
Equal Group Flashcards

MAKE YOUR OWN EQUAL GROUP FLASHCARDS. DRAW EQUAL GROUPS TO MODEL THE PROBLEM.

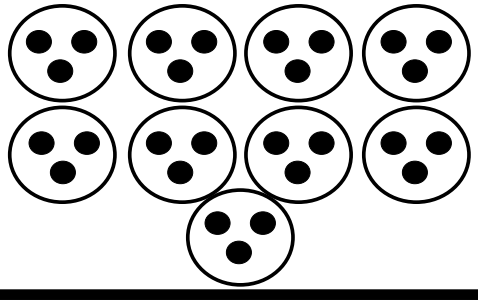
9 ÷ 9 = 1



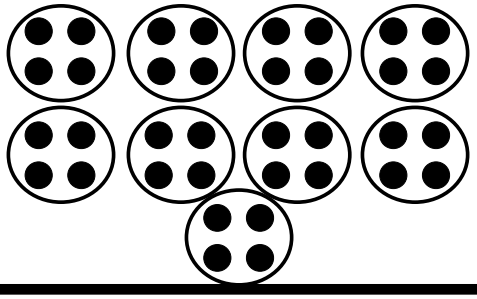
18 ÷ 9 = 2



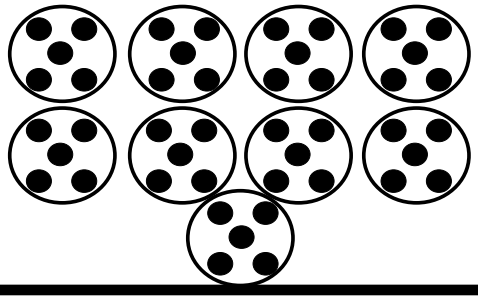
27 ÷ 9 = 3



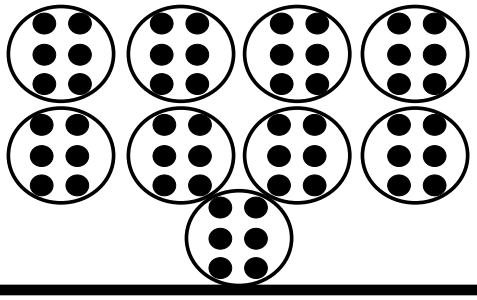
36 ÷ 9 = 4



45 ÷ 9 = 5



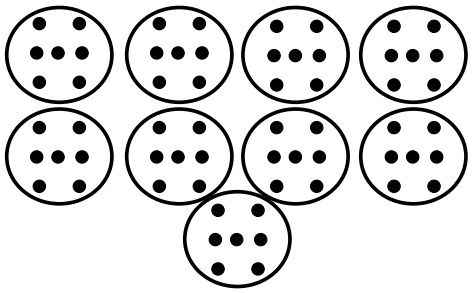
54 ÷ 9 = 6



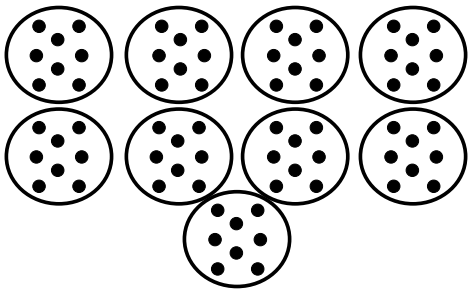
Equal Group Flashcards

MAKE YOUR OWN EQUAL GROUP FLASHCARDS. DRAW EQUAL GROUPS TO MODEL THE PROBLEM.

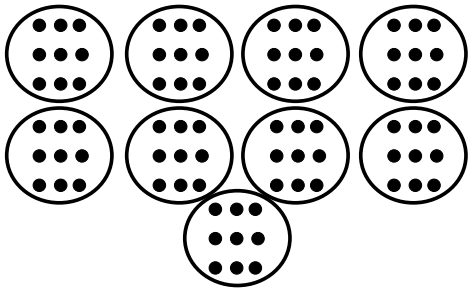
63 ÷ 9 = 7



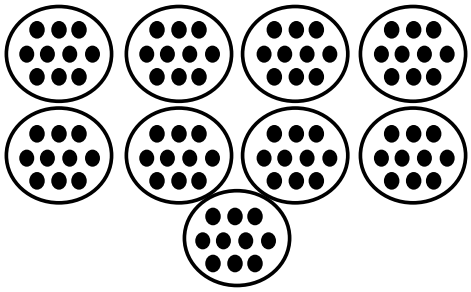
72 ÷ 9 = 8



81 ÷ 9 = 9



90 ÷ 9 = 10



Regular Flashcards

$0 \div 9$	$9 \div 9$
$18 \div 9$	$27 \div 9$
$36 \div 9$	$45 \div 9$

Regular Flashcards

54 ÷ 9	63 ÷ 9
72 ÷ 9	81 ÷ 9
90 ÷ 9	

Dividing by 9 Calling Cards

0	1	2	3	4
5	6	7	8	9
		10		

Dividing by 9
4 IN A ROW

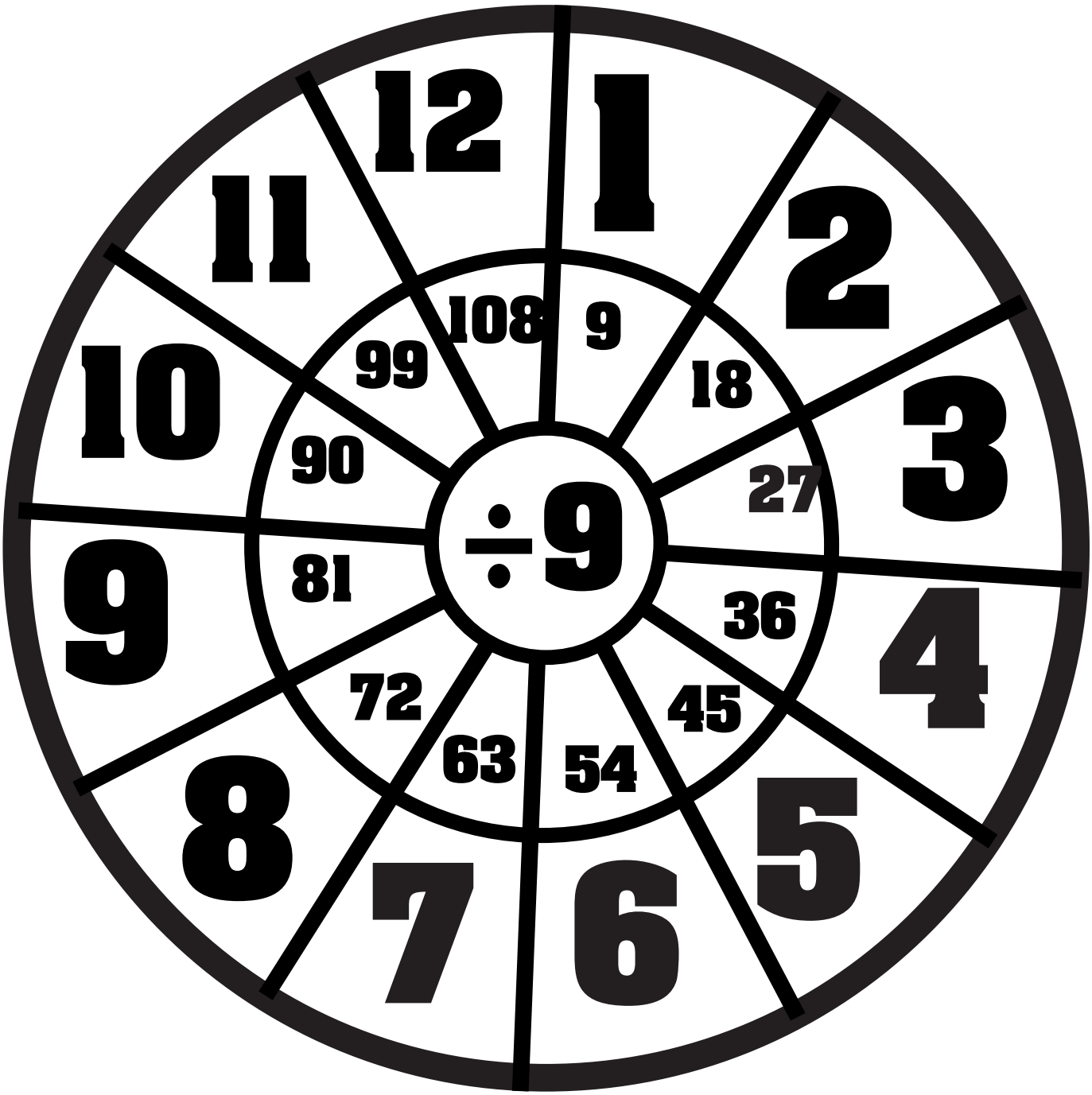
CHECK YOUR ANSWERS USING YOUR BOOKMARK.

54 ÷ 9 = ?	18 ÷ 9 = ?	9 ÷ 9 = ?	90 ÷ 9 = ?	63 ÷ 9 = ?	0 ÷ 9 = ?
9 ÷ 9 = ?	45 ÷ 9 = ?	36 ÷ 9 = ?	81 ÷ 9 = ?	72 ÷ 9 = ?	27 ÷ 9 = ?
0 ÷ 9 = ?	9 ÷ 9 = ?	81 ÷ 9 = ?	27 ÷ 9 = ?	72 ÷ 9 = ?	45 ÷ 9 = ?
54 ÷ 9 = ?	0 ÷ 9 = ?	63 ÷ 9 = ?	18 ÷ 9 = ?	81 ÷ 9 = ?	36 ÷ 9 = ?
0 ÷ 9 = ?	54 ÷ 9 = ?	9 ÷ 9 = ?	63 ÷ 9 = ?	18 ÷ 9 = ?	72 ÷ 9 = ?
27 ÷ 9 = ?	81 ÷ 9 = ?	36 ÷ 9 = ?	90 ÷ 9 = ?	45 ÷ 9 = ?	90 ÷ 9 = ?
9 ÷ 9 = ?	72 ÷ 9 = ?	18 ÷ 9 = ?	81 ÷ 9 = ?	45 ÷ 9 = ?	36 ÷ 9 = ?

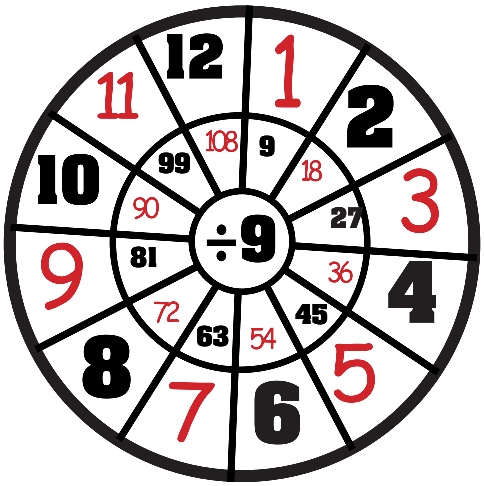
Instructions:

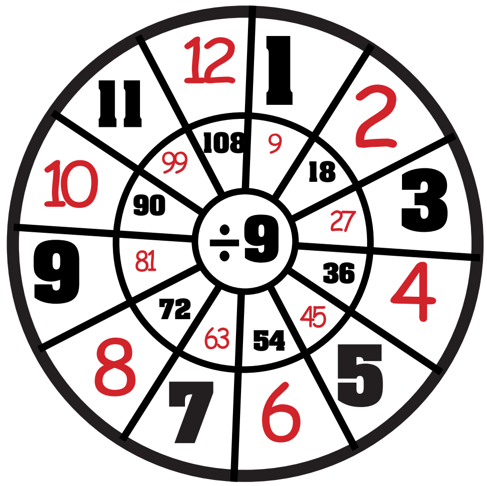
1. Each person pulls a card. Whoever has the largest number starts.
2. Take turns pulling a card and cover the expression that matches that quotient.
3. The first player to get 4 in a row wins!
4. Play again!

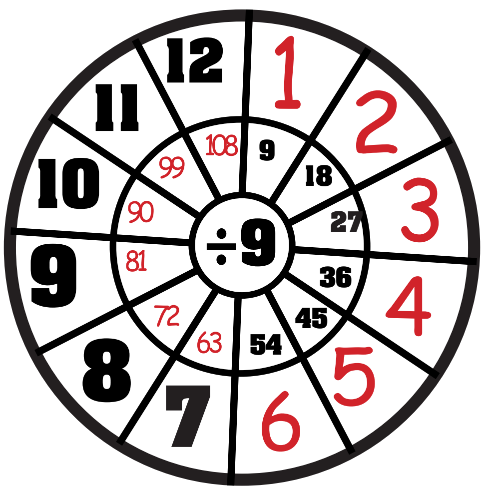
DIVISION WHEELS

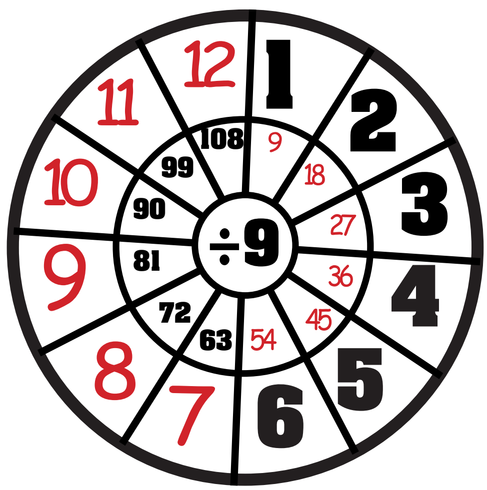


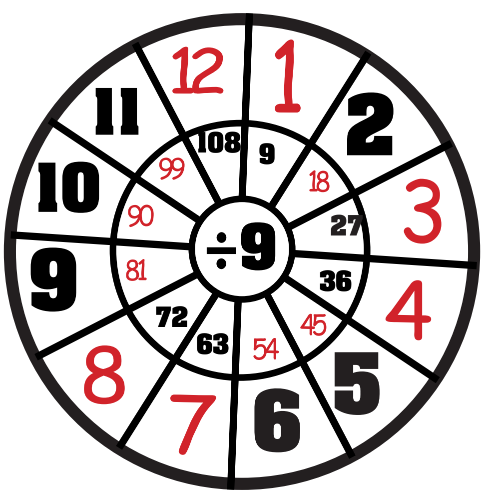
DIVISION WHEELS

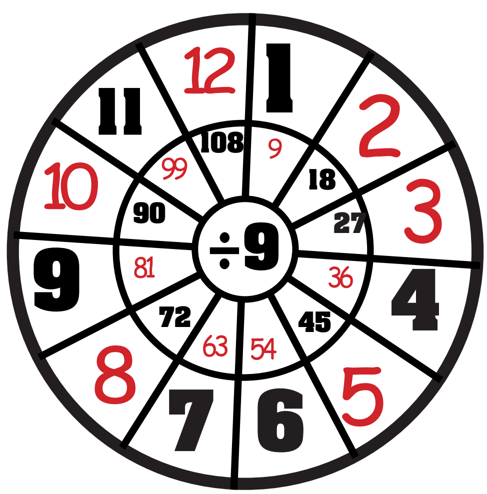




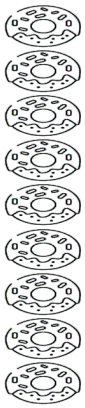








PICTURE FACT FAMILY

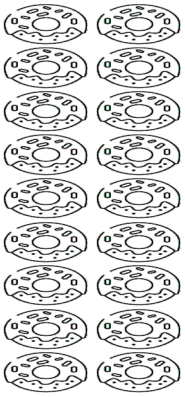


$9 \times 1 = 9$

$1 \times 9 = 9$

$9 \div 1 = 9$

$9 \div 9 = 1$

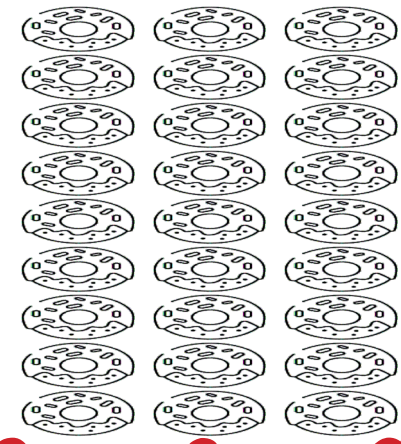


$9 \times 2 = 18$

$2 \times 9 = 18$

$18 \div 9 = 2$

$18 \div 2 = 9$

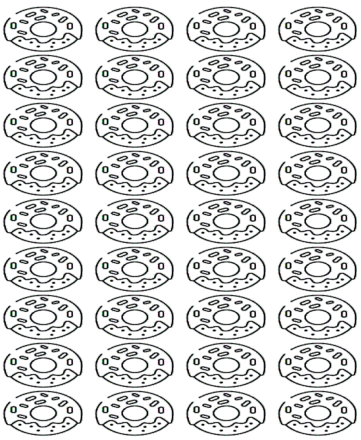


$9 \times 3 = 27$

$3 \times 9 = 27$

$27 \div 3 = 9$

$27 \div 9 = 3$



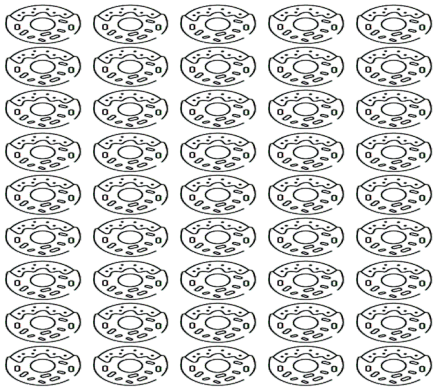
$9 \times 4 = 36$

$4 \times 9 = 36$

$36 \div 4 = 9$

$36 \div 9 = 4$

PICTURE FACT FAMILY

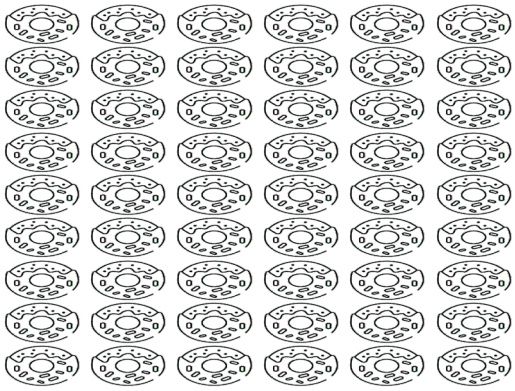


$9 \times 5 = 45$

$5 \times 9 = 45$

$45 \div 5 = 9$

$45 \div 9 = 5$

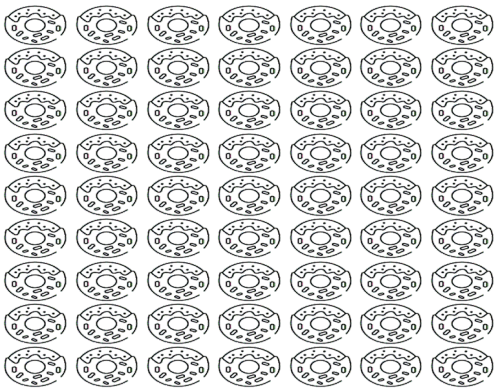


$9 \times 6 = 54$

$6 \times 9 = 54$

$54 \div 6 = 9$

$54 \div 9 = 6$

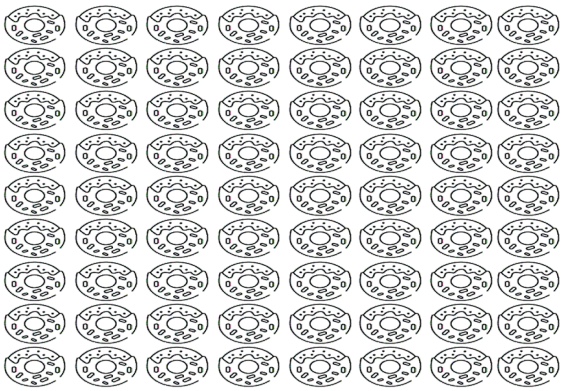


$9 \times 7 = 63$

$7 \times 9 = 63$

$63 \div 7 = 9$

$63 \div 9 = 7$



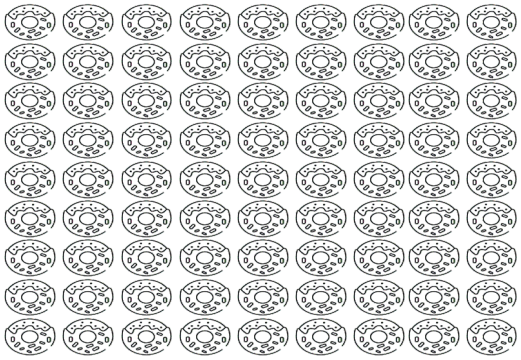
$9 \times 8 = 72$

$8 \times 9 = 72$

$72 \div 8 = 9$

$72 \div 9 = 8$

PICTURE FACT FAMILY



9 x 9 = 81

9 x 9 = 81

81 ÷ 9 = 9

81 ÷ 9 = 9

MAKE YOUR OWN

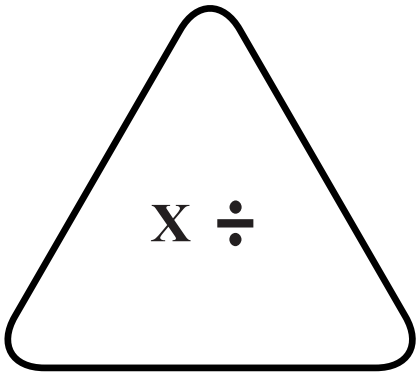
____ x ____ = ____

____ x ____ = ____

____ ÷ ____ = ____

____ ÷ ____ = ____

TRIANGLE FACT FAMILY

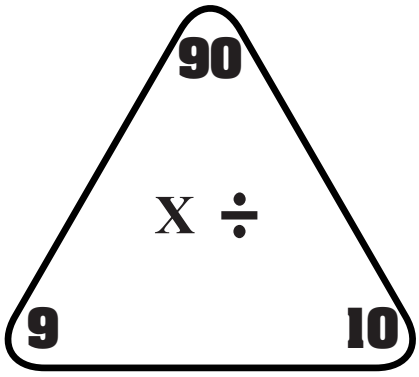


___ x ___ = ___

___ x ___ = ___

___ ÷ ___ = ___

___ ÷ ___ = ___

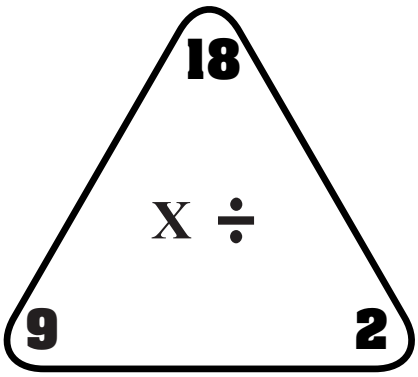


9 x 10 = 90

10 x 9 = 90

90 ÷ 10 = 9

90 ÷ 9 = 10

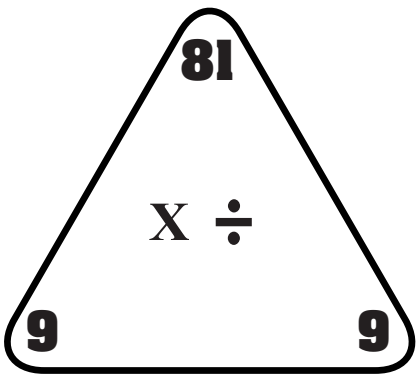


9 x 2 = 18

2 x 9 = 18

18 ÷ 9 = 2

18 ÷ 2 = 9



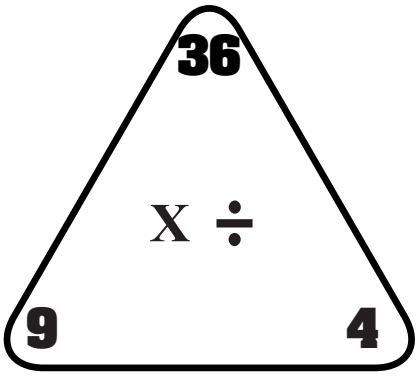
9 x 9 = 81

9 x 9 = 81

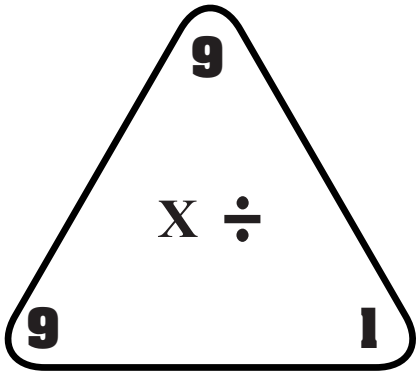
81 ÷ 9 = 9

81 ÷ 9 = 9

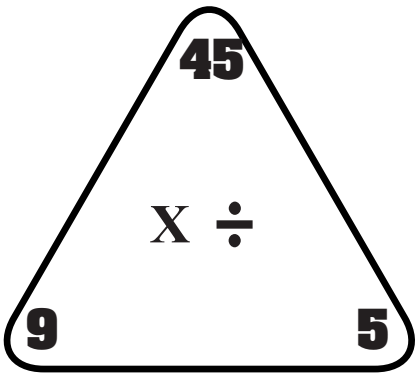
TRIANGLE FACT FAMILY



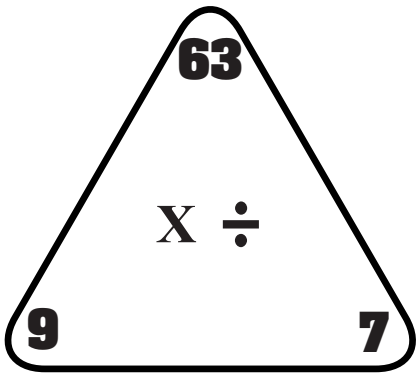
9	x	4	=	36
4	x	9	=	36
36	÷	4	=	9
36	÷	9	=	4



9	x	1	=	9
1	x	9	=	9
9	÷	1	=	9
9	÷	9	=	1

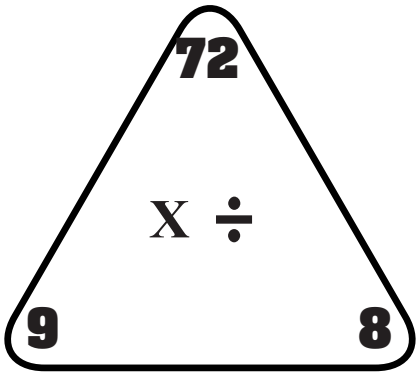


9	x	5	=	45
5	x	9	=	45
45	÷	5	=	9
45	÷	9	=	5

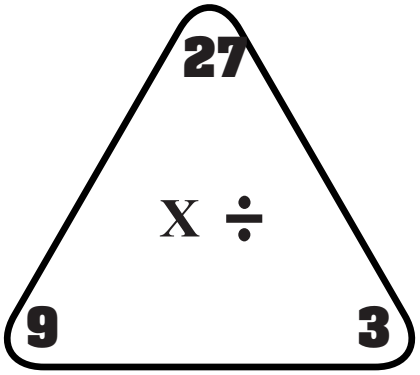


9	x	7	=	63
7	x	9	=	63
63	÷	7	=	9
63	÷	9	=	7

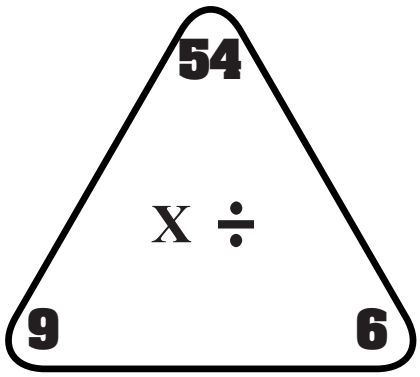
TRIANGLE FACT FAMILY



9 x 8 = 72
8 x 9 = 72
72 ÷ 8 = 9
72 ÷ 9 = 8

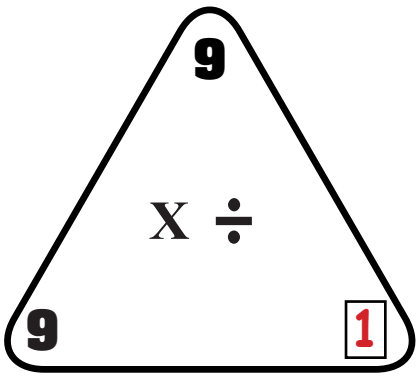


9 x 3 = 27
3 x 9 = 27
27 ÷ 3 = 9
27 ÷ 9 = 3

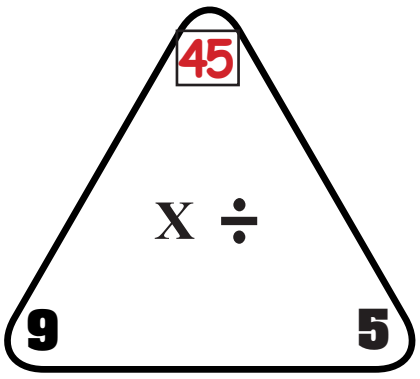


9 x 6 = 54
6 x 9 = 54
54 ÷ 6 = 9
54 ÷ 9 = 6

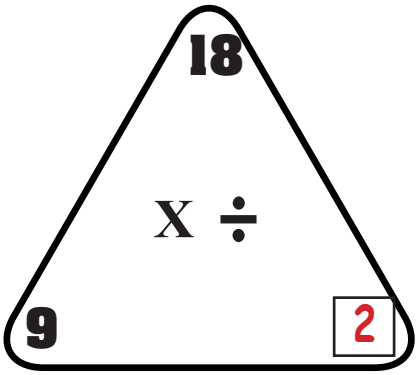
TRIANGLE FACT FAMILY



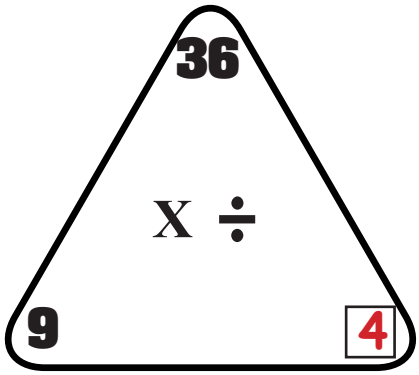
9 x 1 = 9
1 x 9 = 9
9 ÷ 1 = 9
9 ÷ 9 = 1



9 x 5 = 45
5 x 9 = 45
45 ÷ 5 = 9
45 ÷ 9 = 5

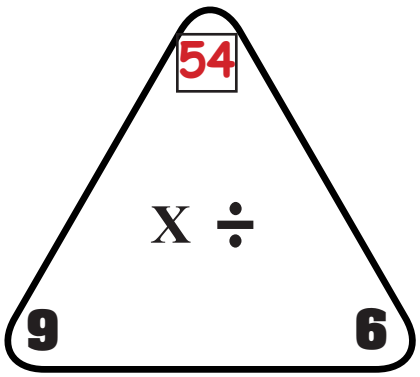


9 x 2 = 18
2 x 9 = 18
18 ÷ 9 = 2
18 ÷ 2 = 9

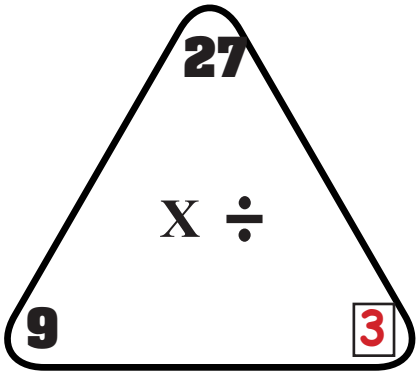


9 x 4 = 36
4 x 9 = 36
36 ÷ 4 = 9
36 ÷ 9 = 4

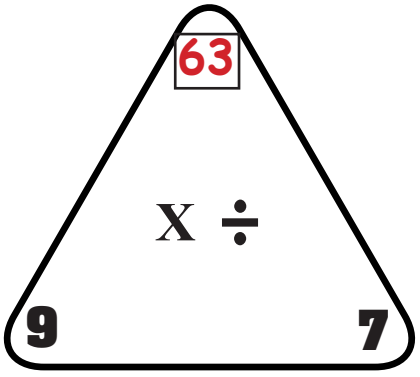
TRIANGLE FACT FAMILY



9 x 6 = 54
6 x 9 = 54
54 ÷ 6 = 9
54 ÷ 9 = 6



9 x 3 = 27
3 x 9 = 27
27 ÷ 3 = 9
27 ÷ 9 = 3



9 x 7 = 63
7 x 9 = 63
63 ÷ 7 = 9
63 ÷ 9 = 7

WORD PROBLEM

MODEL YOUR THINKING AND SOLVE THE PROBLEM.

THE BAKERY HAD 90 DONUTS IN 9 ROWS. THEY HAD THE SAME AMOUNT IN EACH ROW. HOW MANY WERE IN EACH ROW?

90 ÷ 9 = 10

THE BAKERY HAD 18 DONUTS. THEY PUT 9 IN A ROW. HOW MANY ROWS DID THEY MAKE?

18 ÷ 9 = 2

THE BAKERY MADE 27 MUFFINS. THEY PACKED 9 IN A BOX. HOW MANY BOXES DID THEY USE?

27 ÷ 9 = 3

THE BAKERY MADE 45 HAND PIES. THEY USED 9 BOXES. THEY PUT THE SAME AMOUNT OF PIES IN EACH BOX. HOW MANY HAND PIES DID THEY PUT IN EACH BOX?

45 ÷ 9 = 5

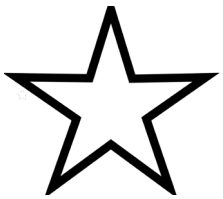
QUIZ

Follow the directions in each box. Choose an equation to represent each problem.

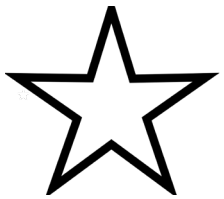
I CAN SKIP COUNT TO DIVIDE BY 9'S!	I CAN USE EQUAL GROUPS TO DIVIDE BY 9'S!

I CAN USE ARRAYS TO MODEL DIVIDING BY 9'S!	I CAN MODEL DIVIDING BY 9'S ON THE NUMBER LINE!

I CAN USE REPEATED SUBTRACTION TO DIVIDE BY 9'S.	MY STRATEGY FOR THINKING ABOUT DIVIDING BY 9'S IS....



GREAT MATH WORK!



CERTIFICATE

_____

HAS SUCCESSFULLY PRACTICED
DIVIDING BY 9'S!

GREAT JOB!

TEACHER: _____ **DATE:** _____

Looking at the 9's

9 ÷ 9 = 1	54 ÷ 9 = 6
18 ÷ 9 = 2	63 ÷ 9 = 7
27 ÷ 9 = 3	72 ÷ 9 = 8
36 ÷ 9 = 4	81 ÷ 9 = 9
45 ÷ 9 = 5	90 ÷ 9 = 10

Bookmarks


9
Division
9 ÷ 9 = 1
18 ÷ 9 = 2
27 ÷ 9 = 3
36 ÷ 9 = 4
45 ÷ 9 = 5
54 ÷ 9 = 6
63 ÷ 9 = 7
72 ÷ 9 = 8
81 ÷ 9 = 9
90 ÷ 9 = 10
DIVIDING A NUMBER BY 9
Hint: Think Multiplication!
9 x ? = _
9
DIVISION
9 ÷ 9 = 1
18 ÷ 9 = 2
27 ÷ 9 = 3
36 ÷ 9 = 4
45 ÷ 9 = 5
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DIVIDING A NUMBER BY 9
Hint: Think Multiplication!
9 x ? = _