Math Fact Signs

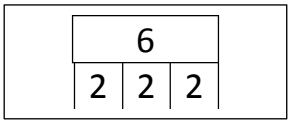
Some suggestions for their use:

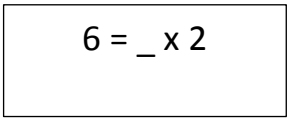
Introduce a fact sign or signs for one set of facts. Do a mini-lesson on multiple representations having students think, pair, and share to contribute other ways of representing the fact. Add to their contributions any models that you feel are an important addition to their understanding. Then pick one or more of these activities to allow them experiences with the multiple representations.

1. Have students create other signs for that fact or set of facts to post throughout the school
2. Give a student a visual model or number fact on a half sheet and ask them to collect at least 5 other ways to represent the fact from 5 other students. Make it daily over a week asking that they have every student in their class represent at least one fact during the week and vary the number of representations per fact to coincide with the number of students in your class. (Ex. 30 students in the class - each student collects 1 representation from 6 students for each of their daily facts)
3. Create a book of facts for a number (Ex. The two's from 1 through 10) showing multiple ways for each fact. (see example next page)
4. Use one of the fact signs worksheets (copies after the fact signs) and have students learn or practice multiple ways of representing a fact or facts.
5. Create a set of fact cards with a visual model on one side and the fact written in one of multiple ways on the other side. Have students partner and practice their facts. Vary how they do it.

Example

Side 1





Side 2

6. Use a word problem to spark a discussion about which of the multiple ways would or would not be an appropriate way to illustrate the answer to the word problem and why.

7. Use a visual model or number fact in a warm up or homework and ask the student to show it two or more ways or have them create a word problem that the representation would be an appropriate answer for and explain their thinking.

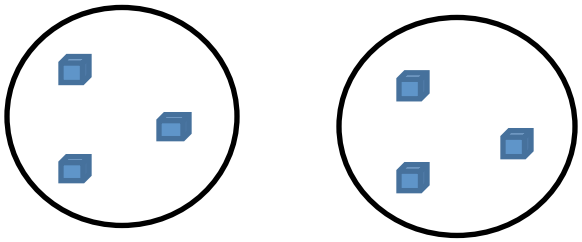
8. Have the students divide into teams showing them either a fact or a visual representation and have them show you another representation.

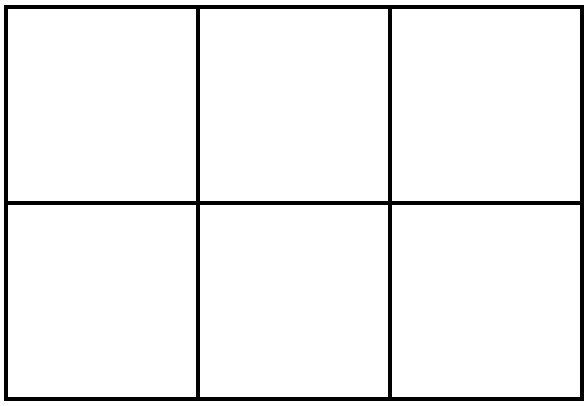
9. Ask them to use the commutative property or the distributive property using that fact.

The next 5 pages can be used to make a large class example of suggestion number 3 on this page for the facts 2x3 and 3x2.

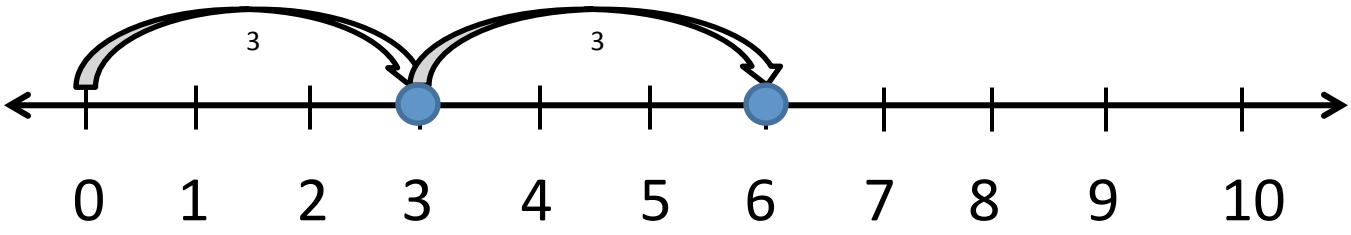
2×3

6	
3	3

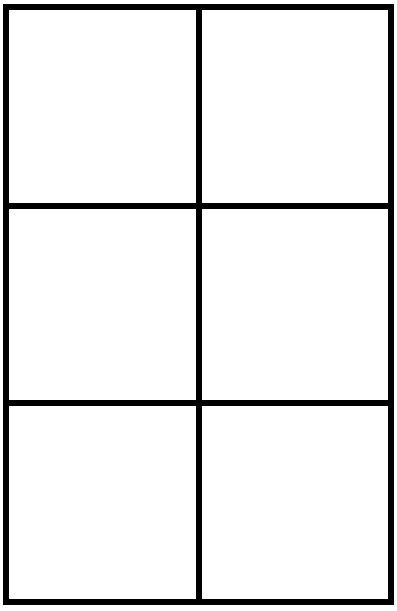


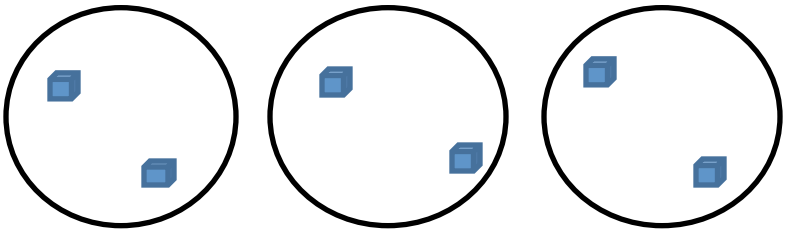


3+3

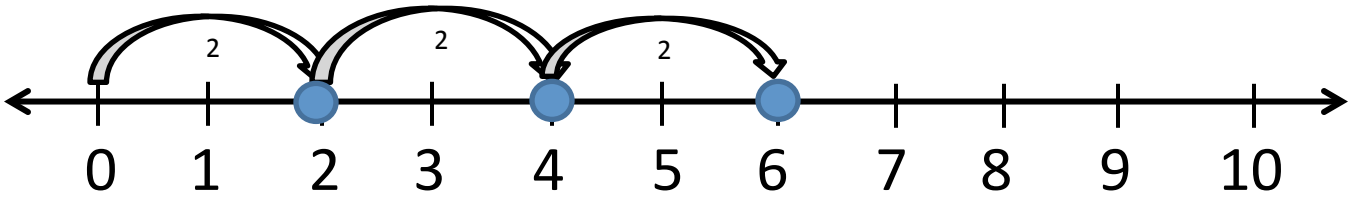


3×2





2+2+2



2×3

3×2

$2 \times \_ = 6$

$3 \times \_ = 6$

$\_ \times 3 = 6$

$\_ \times 2 = 6$

$6 = 2 \times \_$

$6 = 3 \times \_$

$6 = \_ \times 2$

$6 = \_ \times 3$

$(2 \times 2) + (2 \times 1)$

$(2 \times 1) + (2 \times 2)$

$2(2 + 1)$

$3(1+1)$

Distributive Property

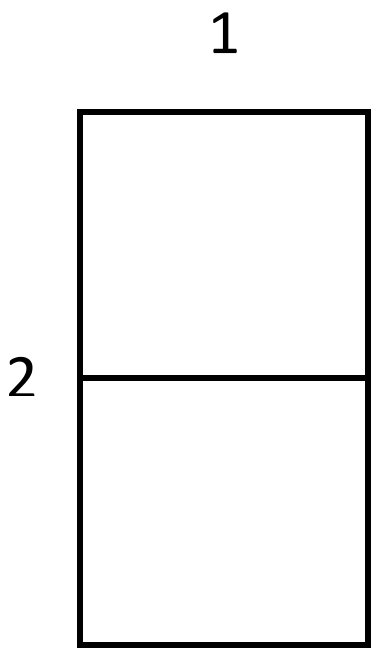
Commutative Property

Associative Property

MATH FACT SIGNS

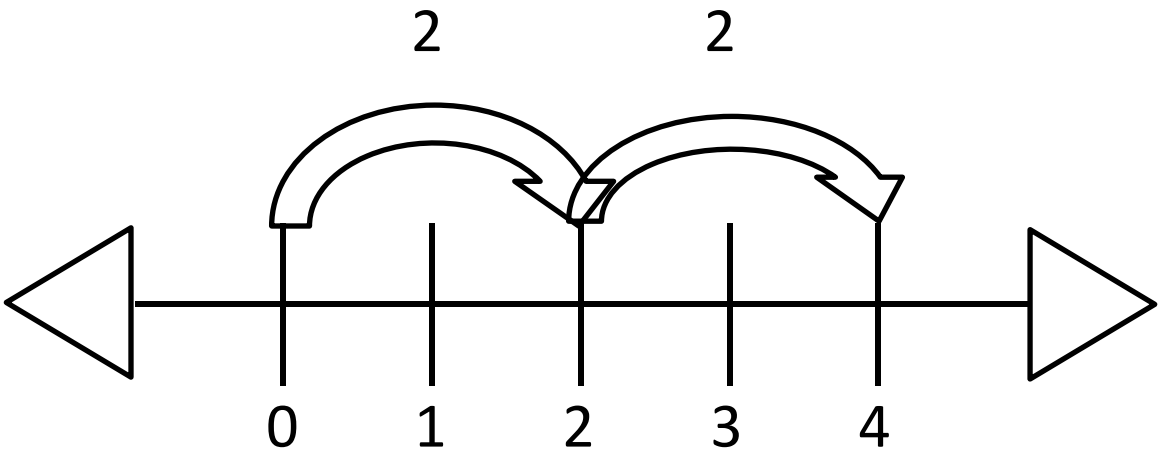
$2 \times 1 = \_\_$

Area model



4 = 2 x _

Number line

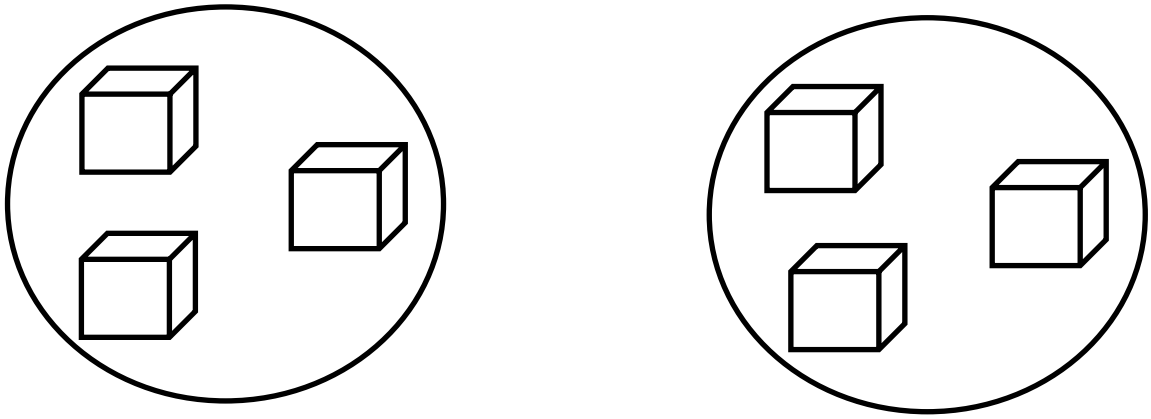


Repeated addition

2 + 2

2 x _ = 6

Grouping



___ = 2 x 4

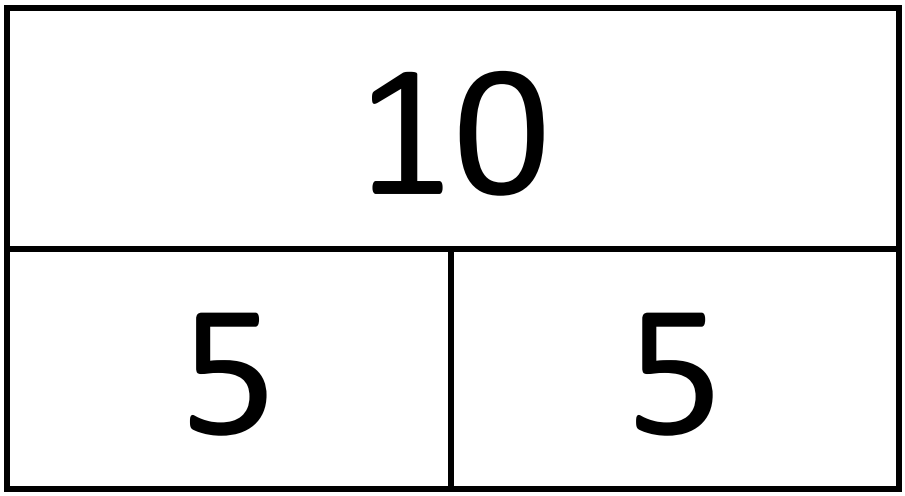
Decompose

(2 x 2) + (2 x 2)

Array

2 x 5 = 10

Bar model

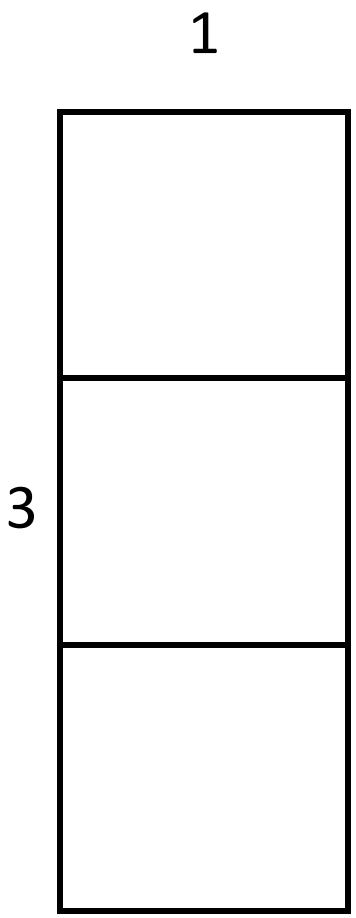


Repeated addition

5 + 5

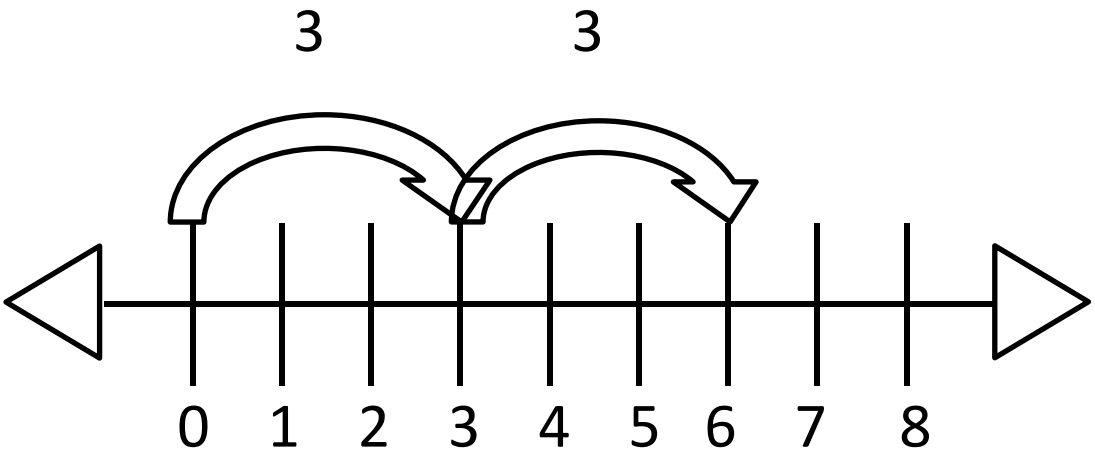
3×1=__

Area model



6 = 3 x _

Number line

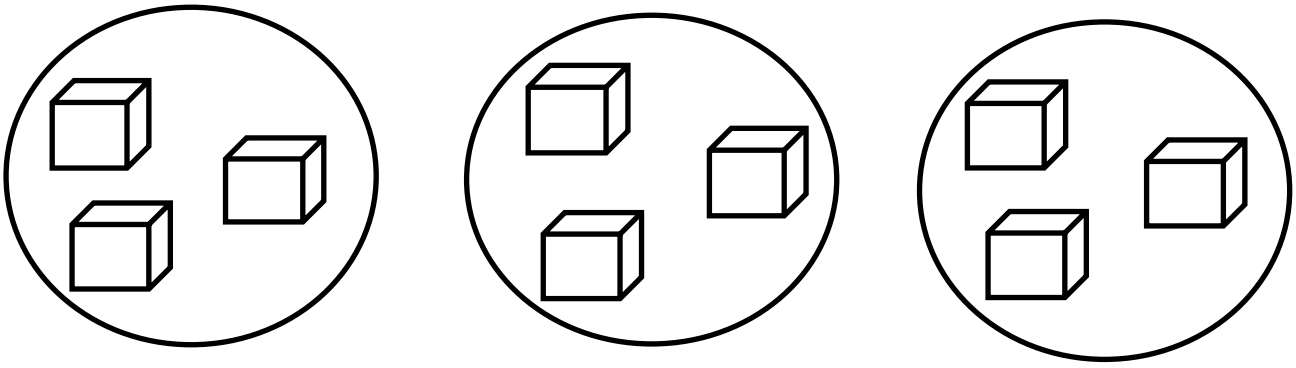


Repeated addition

3 + 3

3 x _ = 9

Grouping



Repeated addition

3 + 3 + 3

___ = 3 x 4

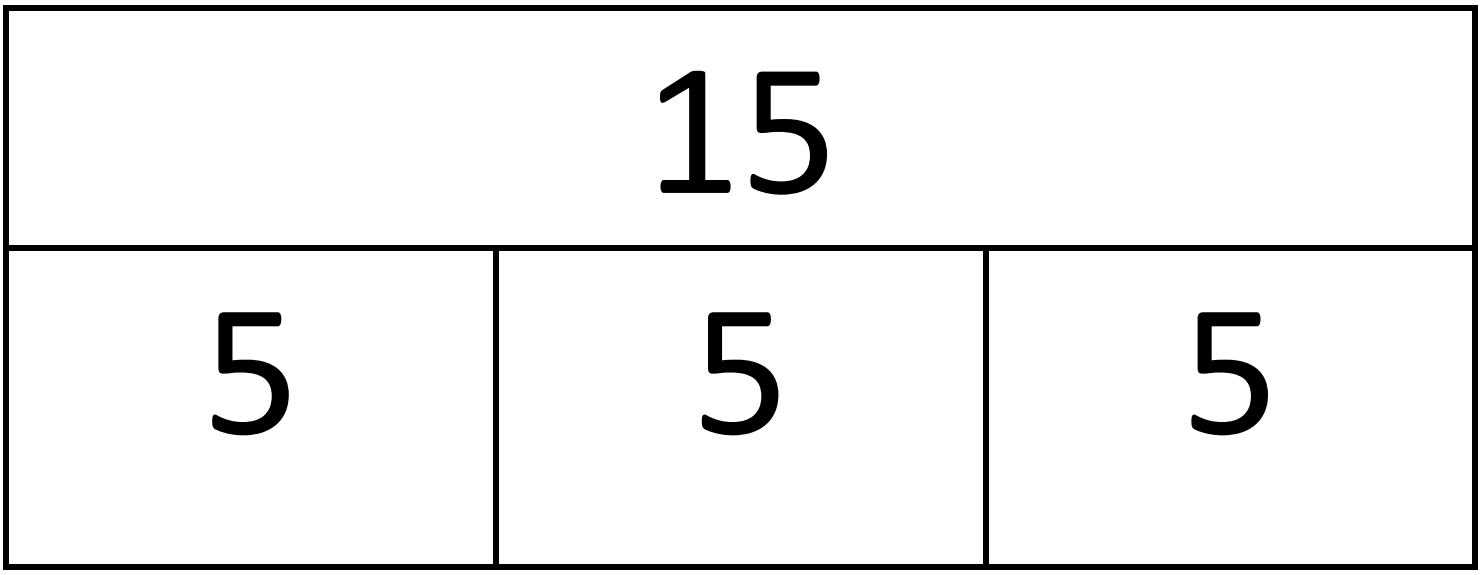
Array

Decompose

(3 x 2) + (3 x 2)

3 x 5 = 15

Bar model



Decompose

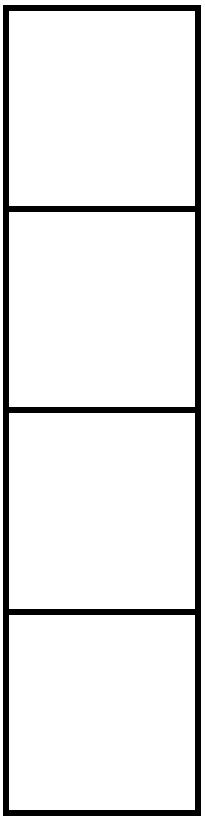
(2 x 5) + (1 x 5)

4×1=__

Area model

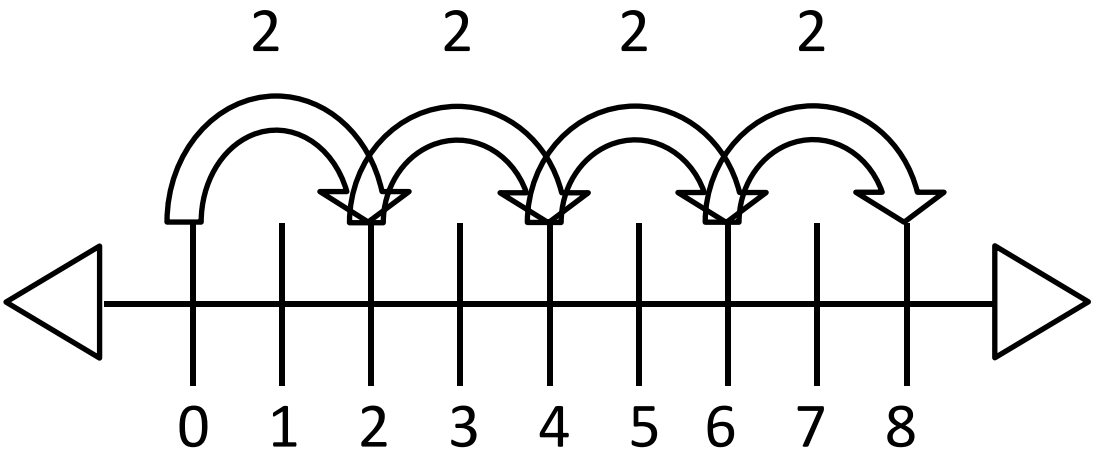
1

4



8 = 4 x _

Number line

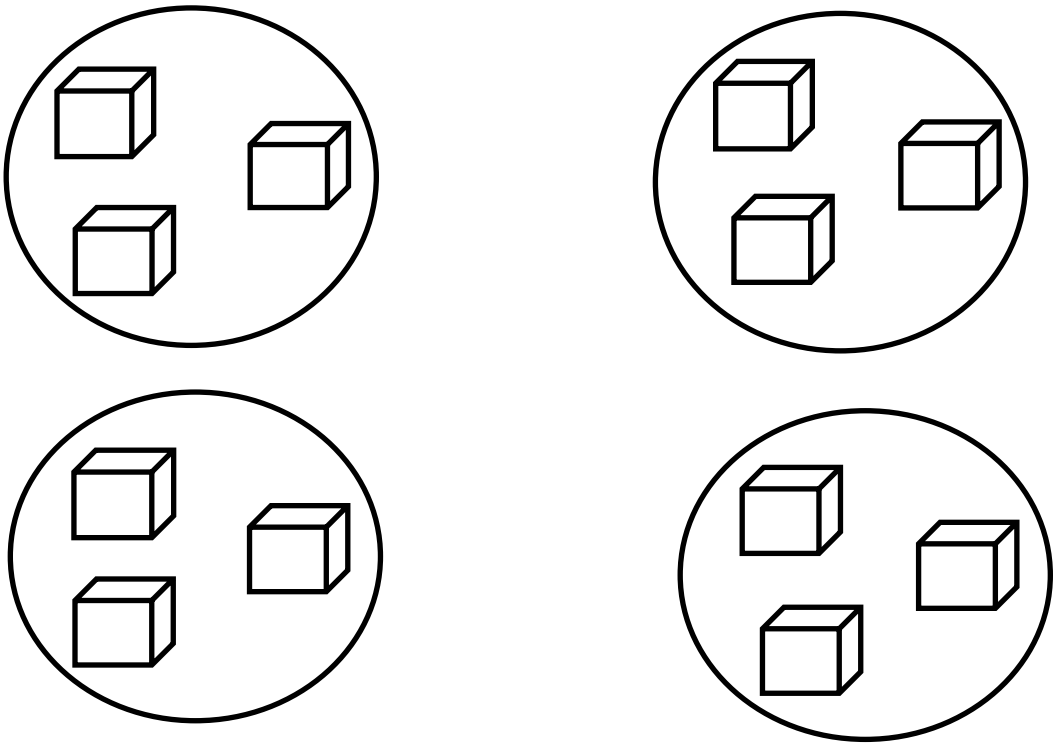


Repeated addition

2 + 2 + 2 + 2

4 x _ = 12

Grouping

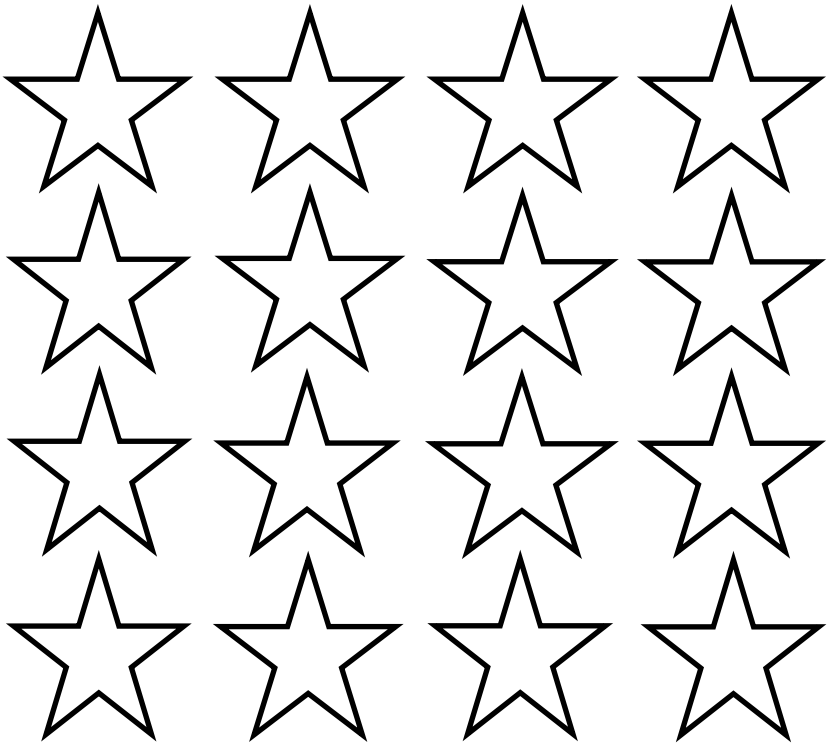


Repeated addition

3 + 3 + 3 + 3

___ = 4 x 4

Array

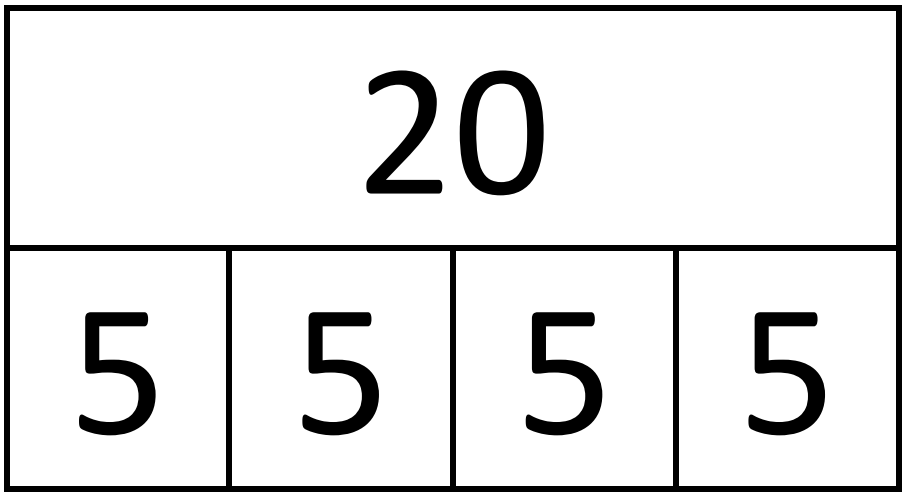


Decompose

$$(4 \times 2) + (4 \times 2)$$

$$4 \times 5 = 20$$

Bar model



Decompose

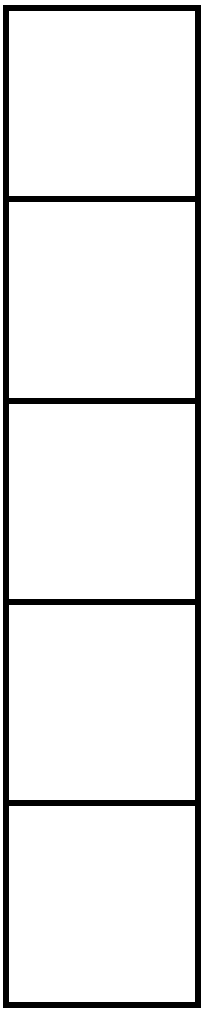
$$(2 \times 5) + (2 \times 5)$$

5×1=__

Area model

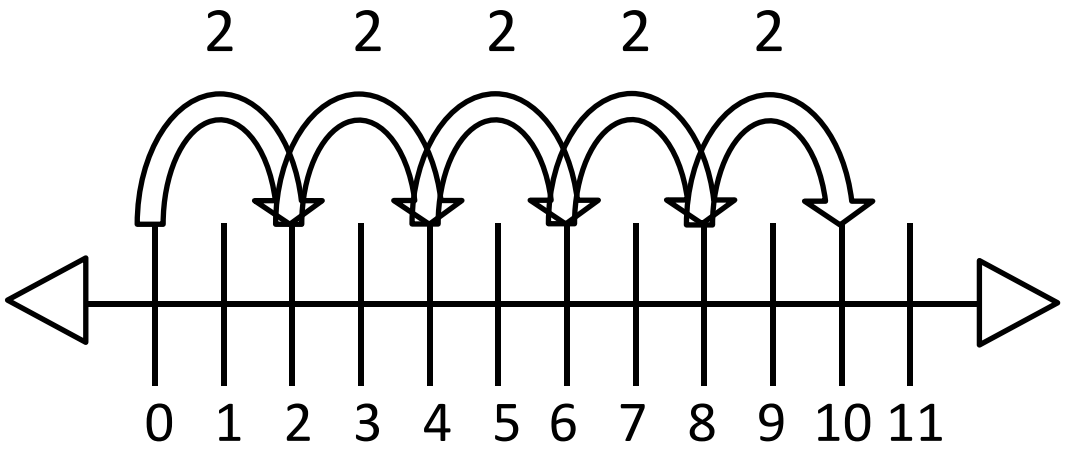
1

5



10 = 5 x _

Number line

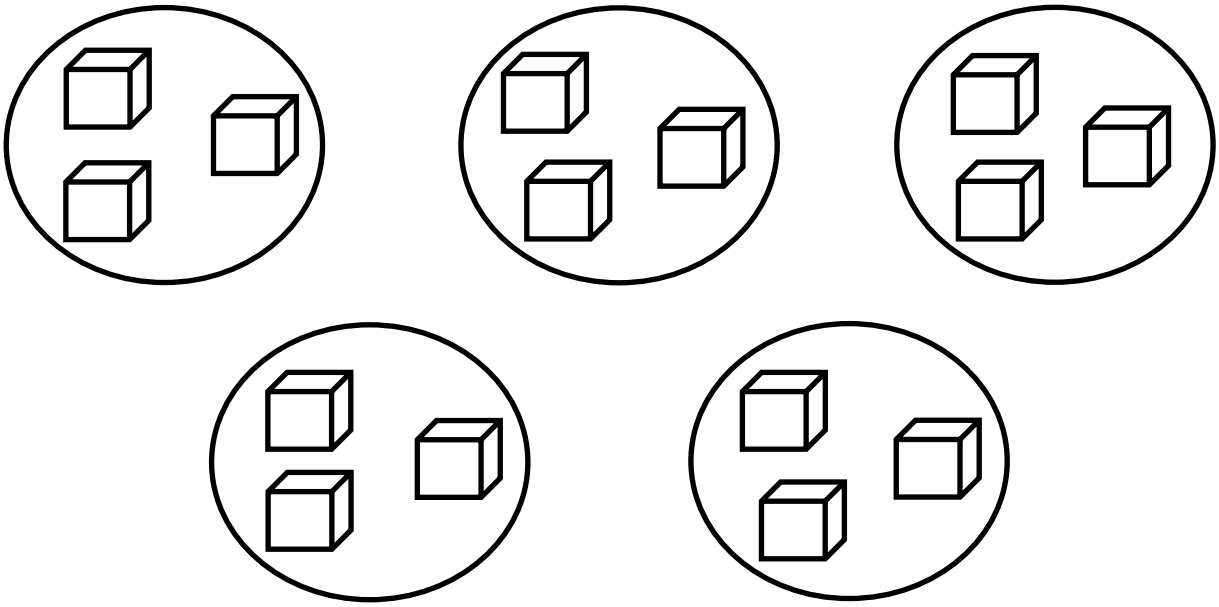


Repeated addition

2 + 2 + 2 + 2 + 2

5 x _ = 15

Grouping

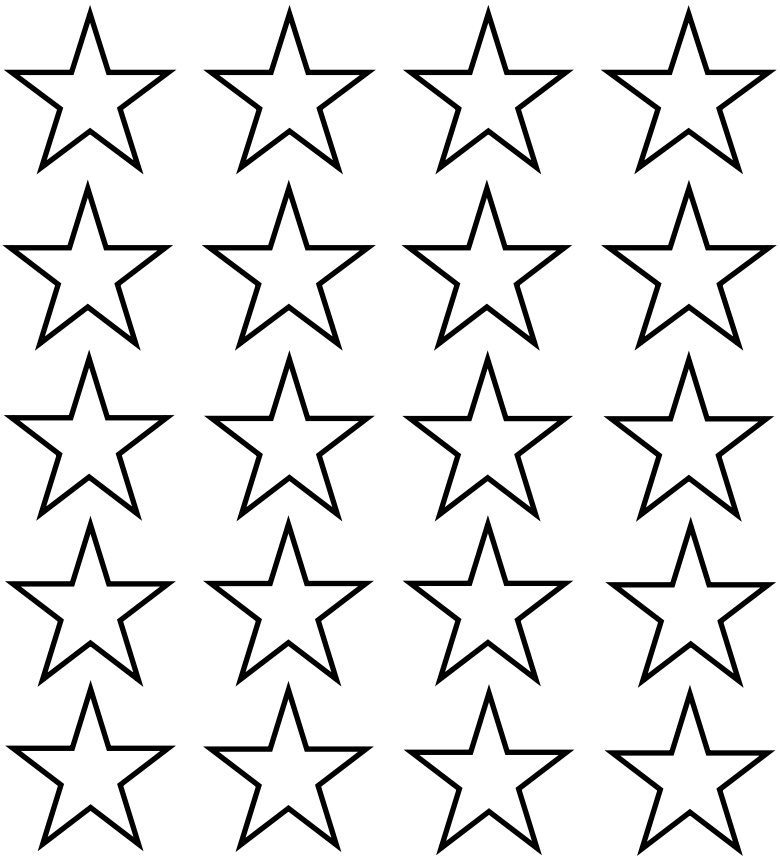


___ = 5 x 4

Decompose

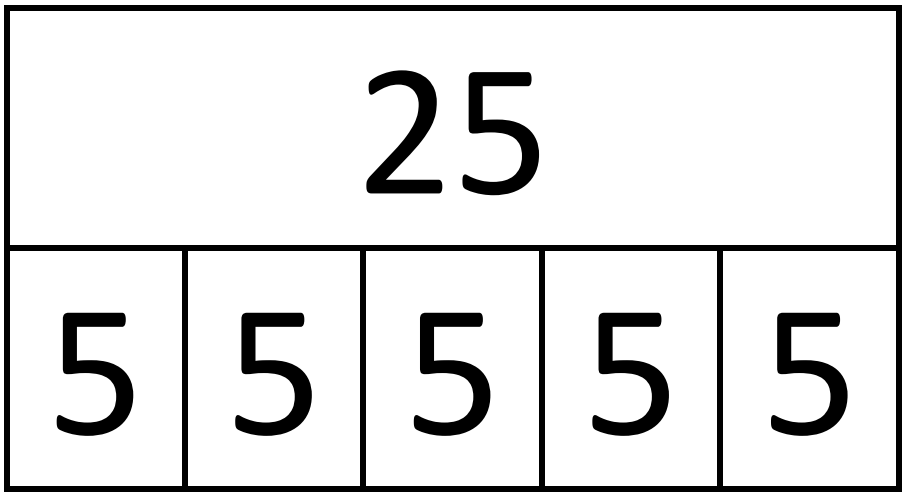
(5 x 2) + (5 x 2)

Array



5 x 5 = 25

Bar model



Repeated addition

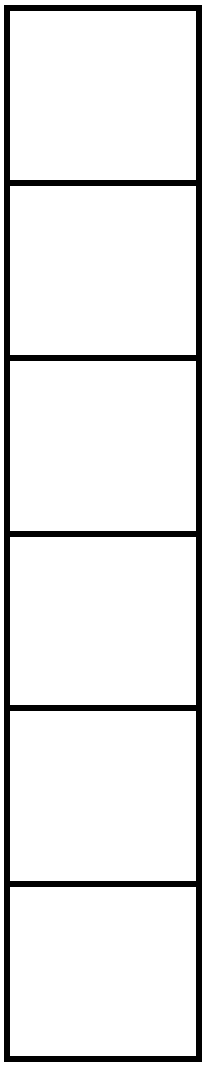
5 + 5 + 5 + 5 + 5

6×1=__

Area model

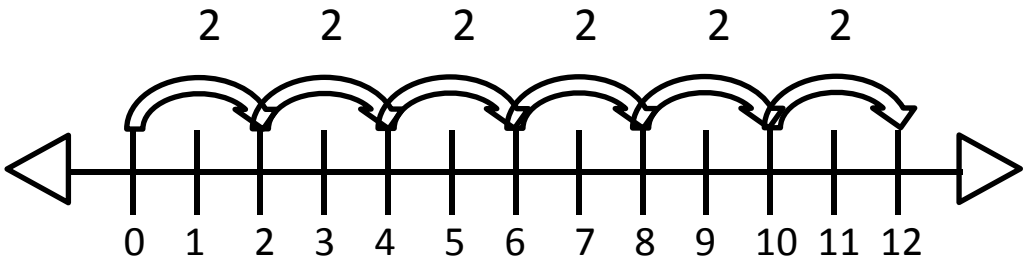
1

6



12 = 6 x _

Number line

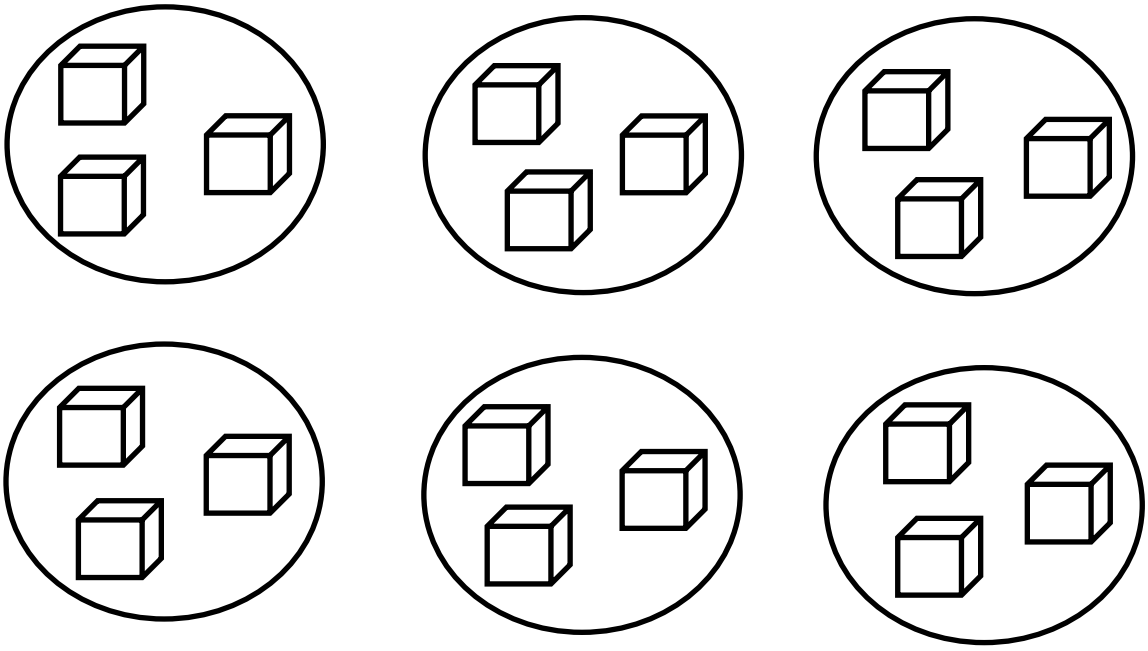


Repeated addition

2 + 2 + 2 + 2 + 2 + 2

6 x _ = 18

Grouping

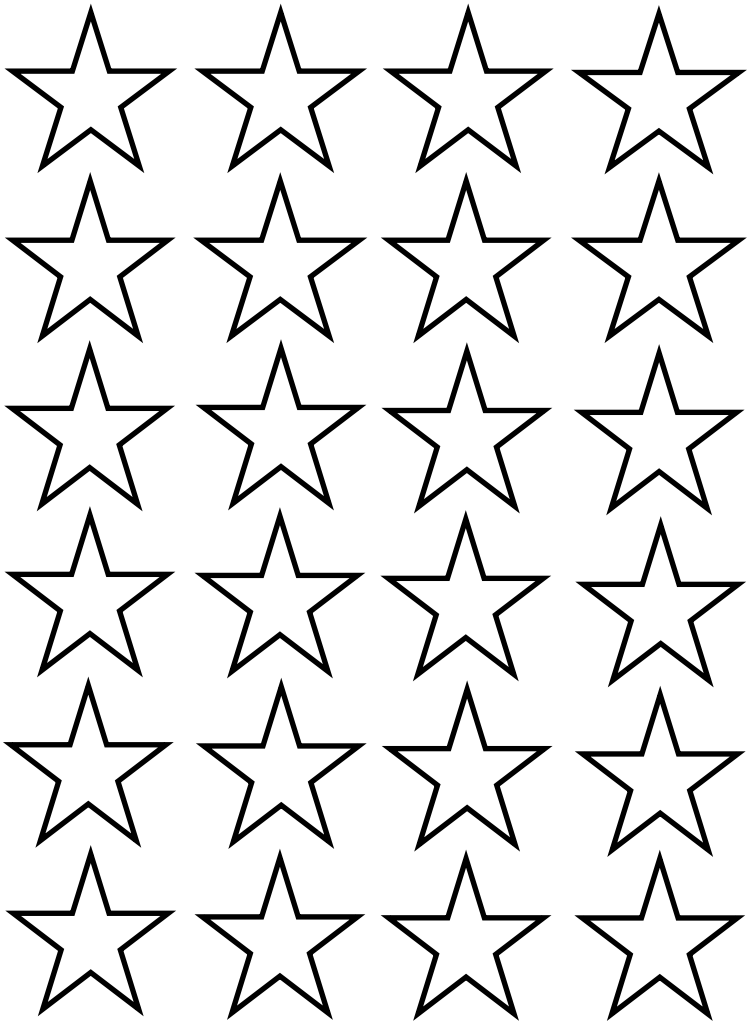


___ = 6 x 4

Decompose

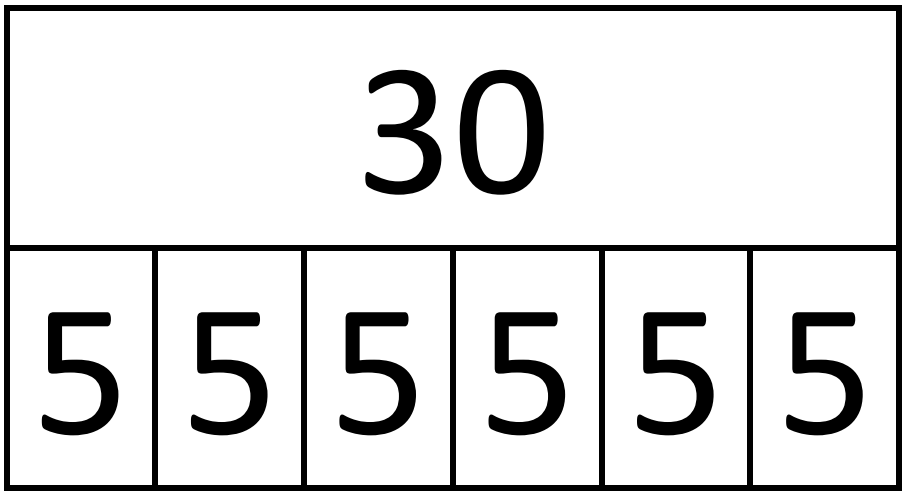
(6 x 2) + (6 x 2)

Array



6 x 5 = 30

Bar model

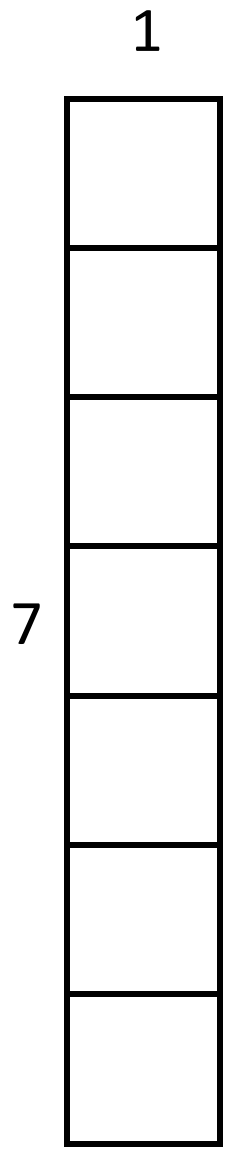


Repeated addition

5 + 5 + 5 + 5 + 5 + 5

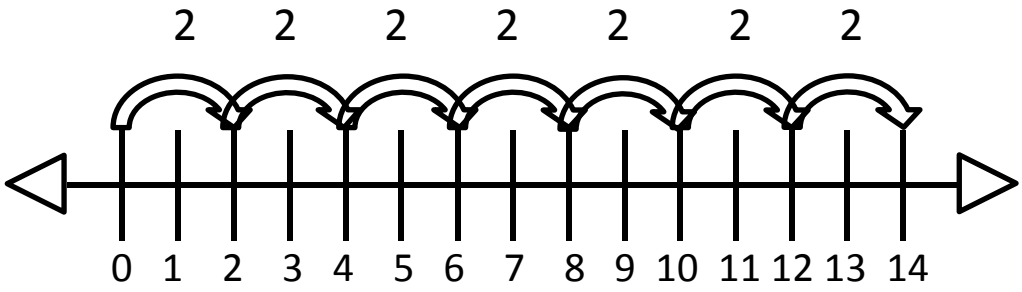
7×1=__

Area model



14 = 7 x _

Number line

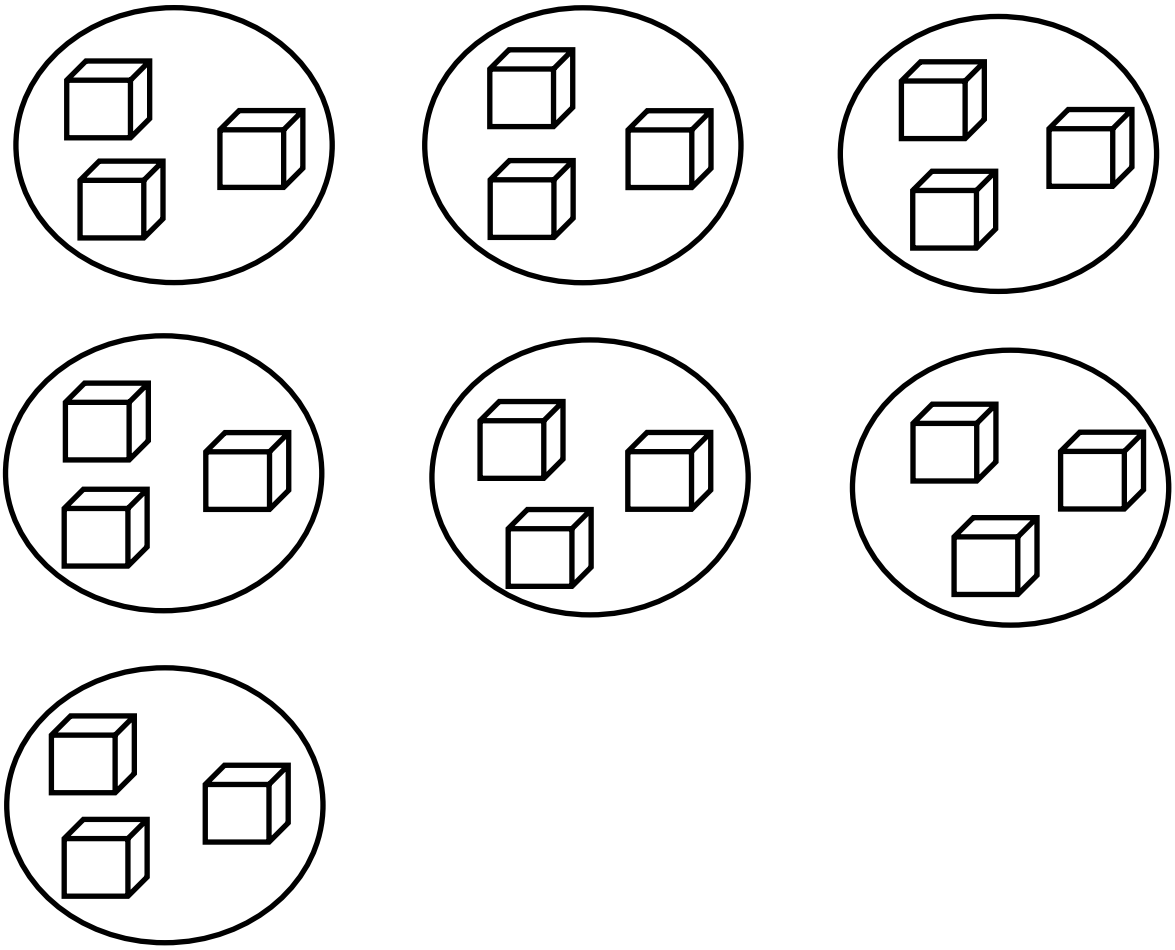


Repeated addition

2 + 2 + 2 + 2 + 2 + 2 + 2

7 x _ = 21

Grouping

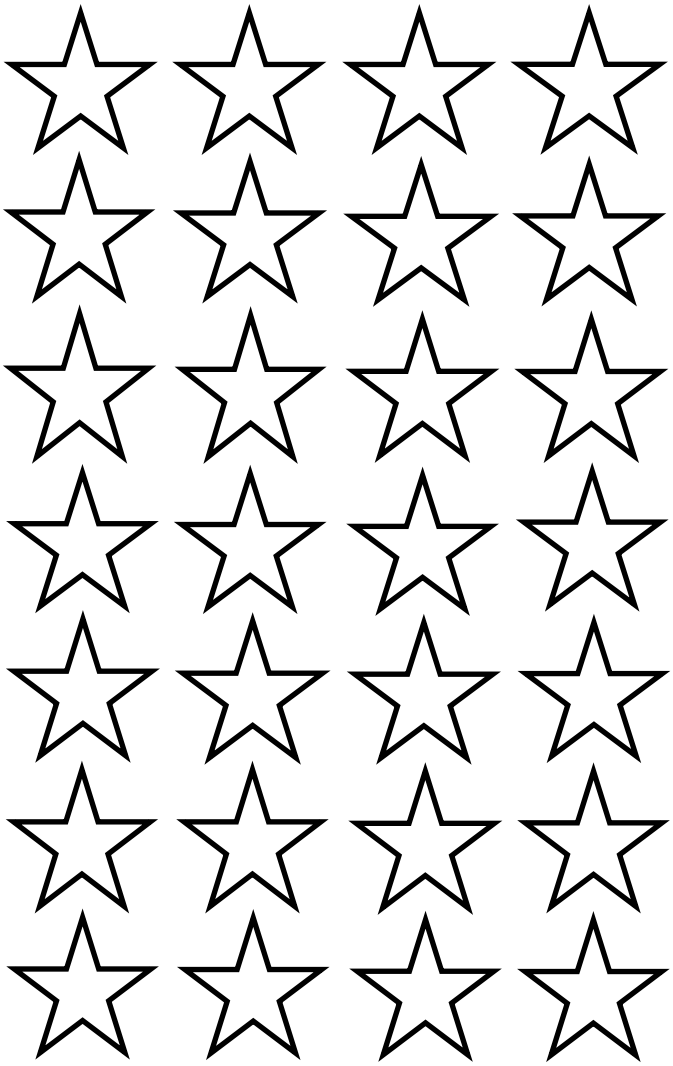


___ = 7 x 4

Decompose

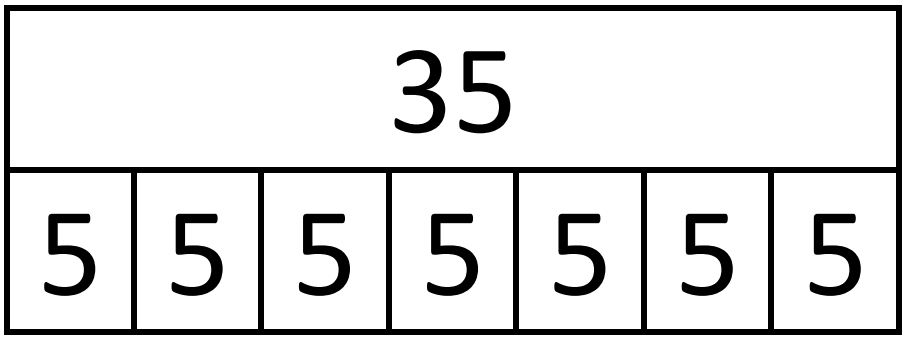
(7 x 2) + (7 x 2)

Array



7 x 5 = 35

Bar model

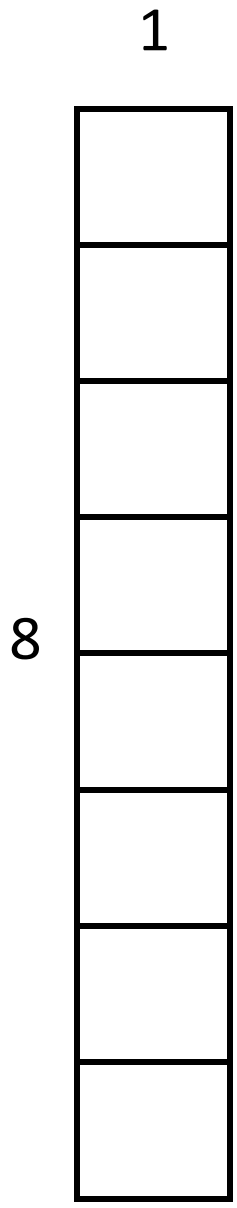


Repeated addition

5 + 5 + 5 + 5 + 5 + 5 + 5

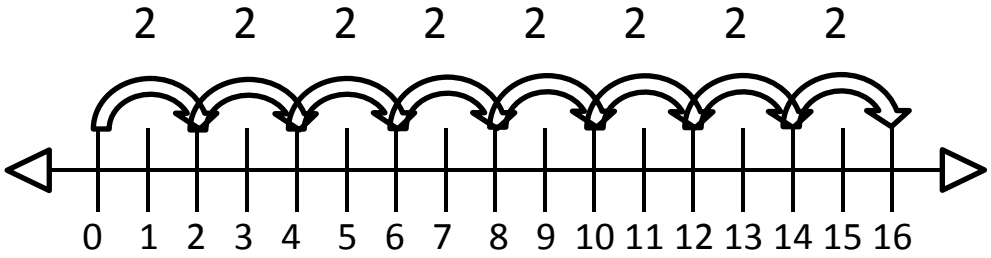
8×1=__

Area model



16 = 8 x _

Number line

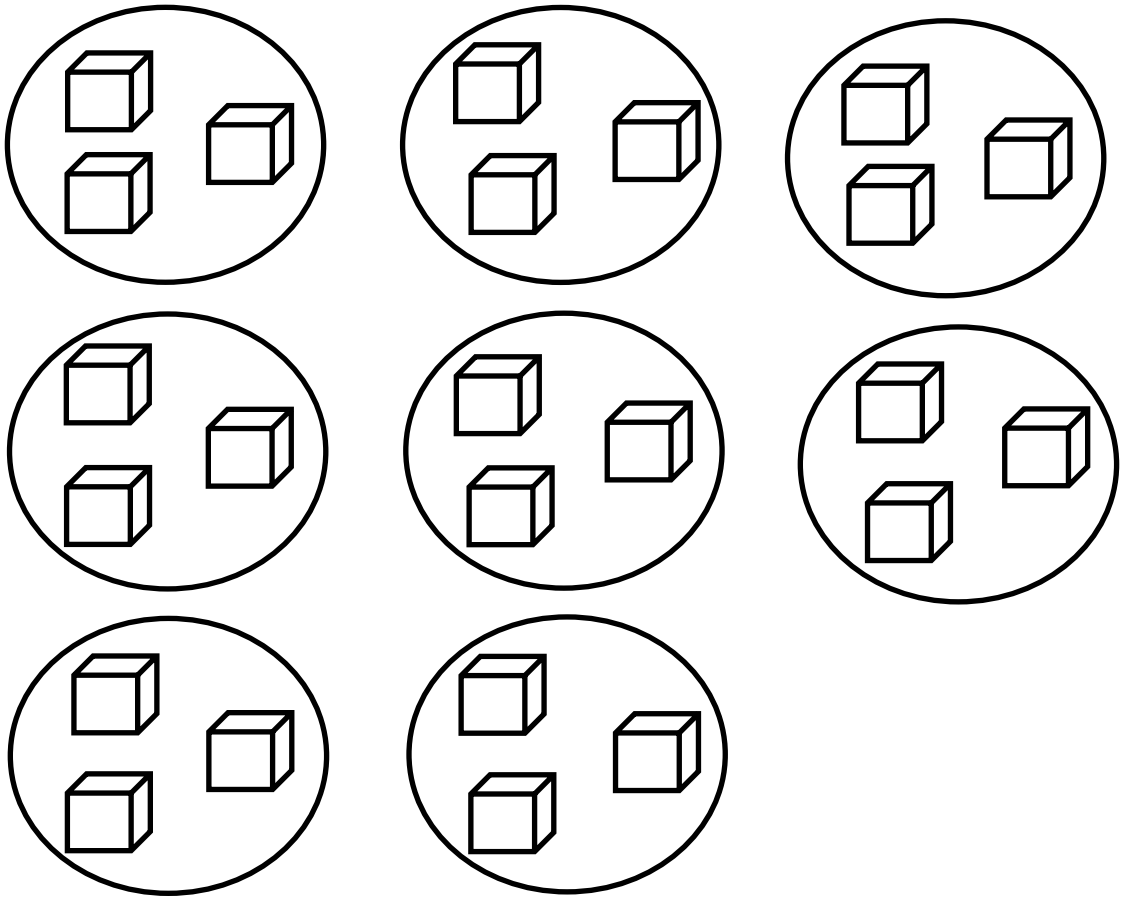


Repeated addition

2 + 2 + 2 + 2 + 2 + 2 + 2 + 2

8 x _ = 24

Grouping

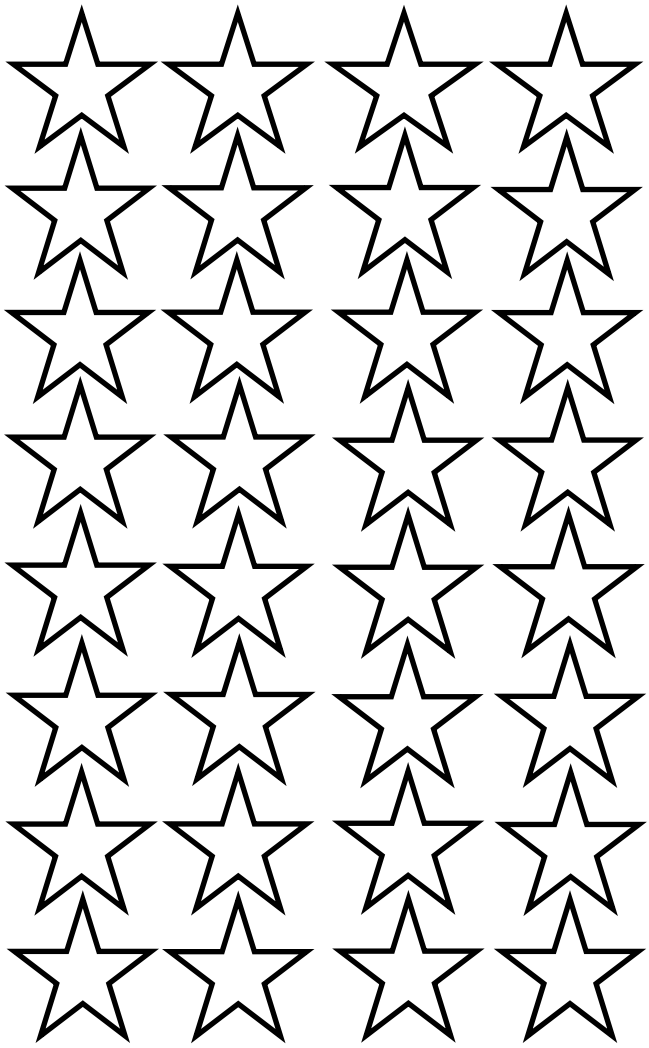


__ = 8 x 4

Decompose

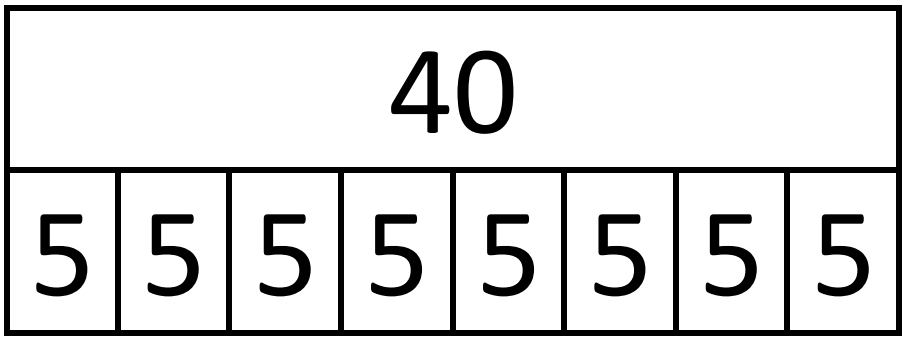
(8 x 2) + (8 x 2)

Array



8 x 5 = 40

Bar model

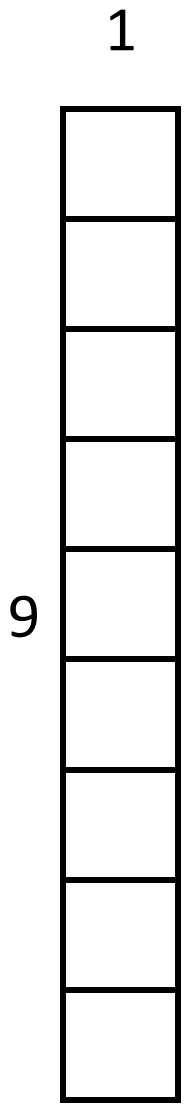


Repeated addition

5 + 5 + 5 + 5 + 5 + 5 + 5 + 5

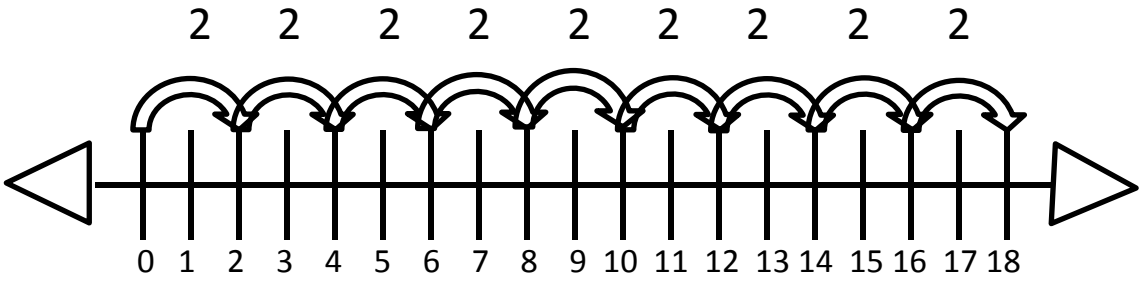
9×1=__

Area model



18 = 9 x _

Number line

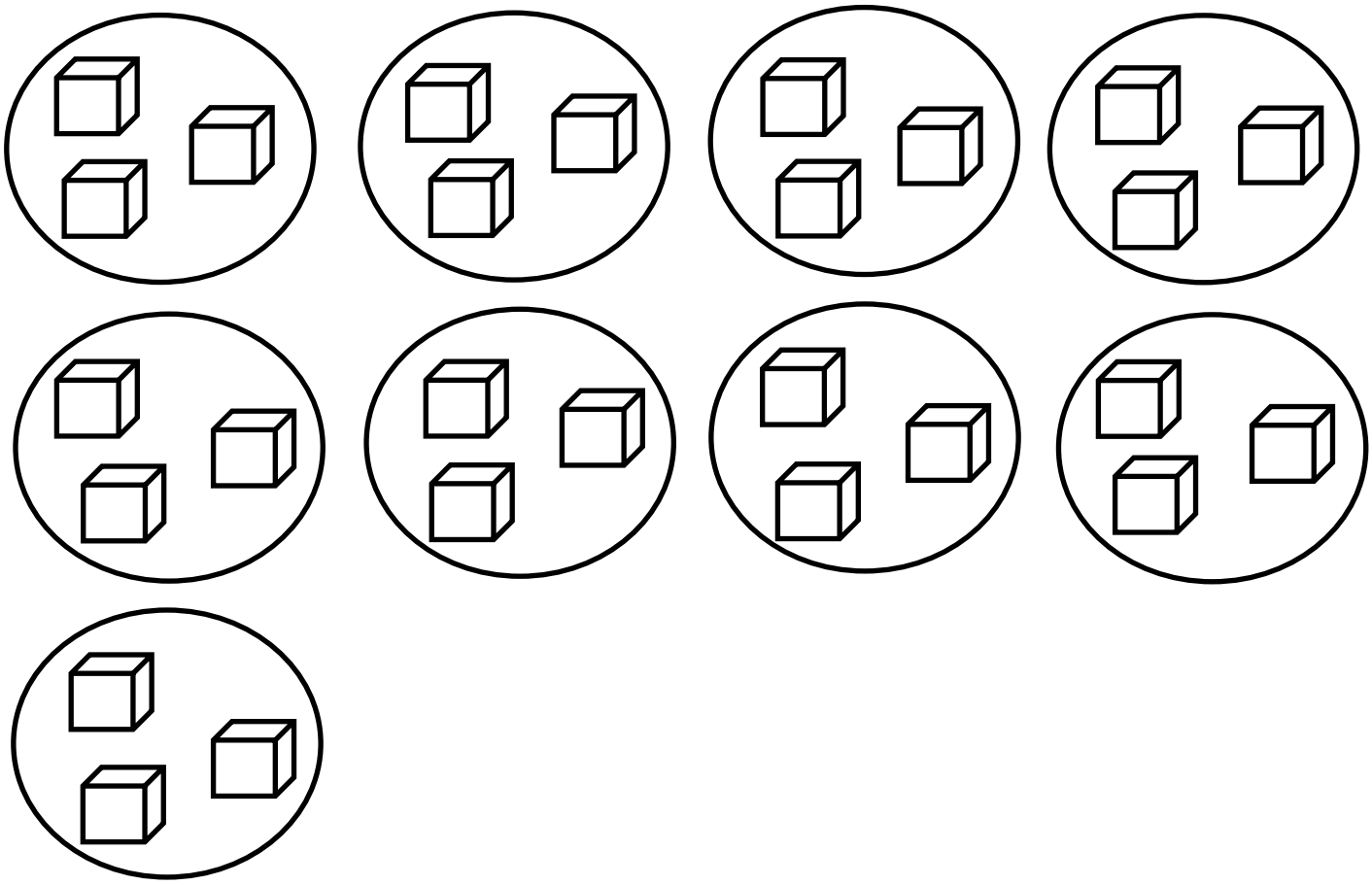


Repeated addition

2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2

9 x _ = 27

Grouping

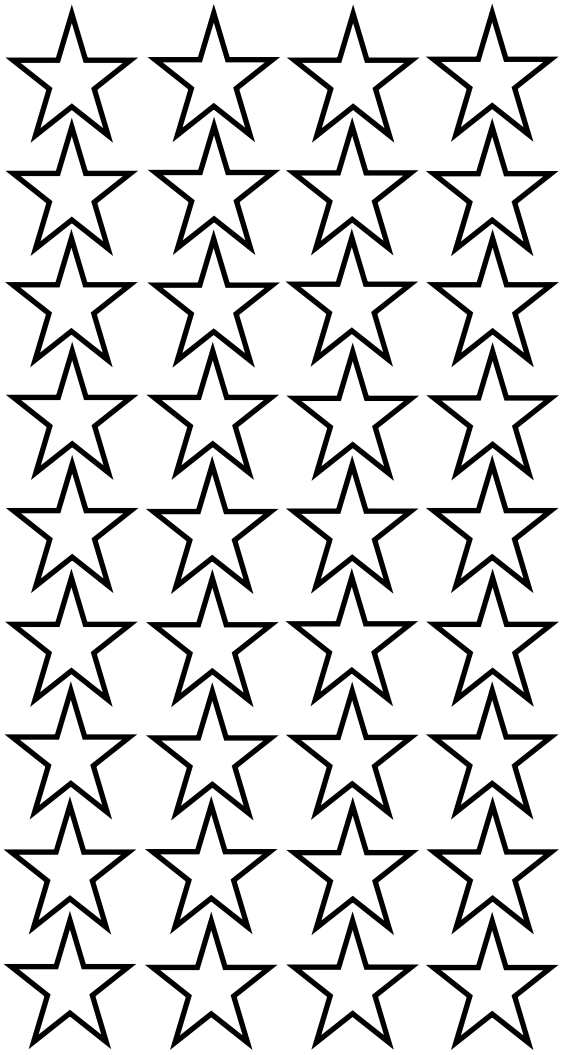


___ = 9 x 4

Decompose

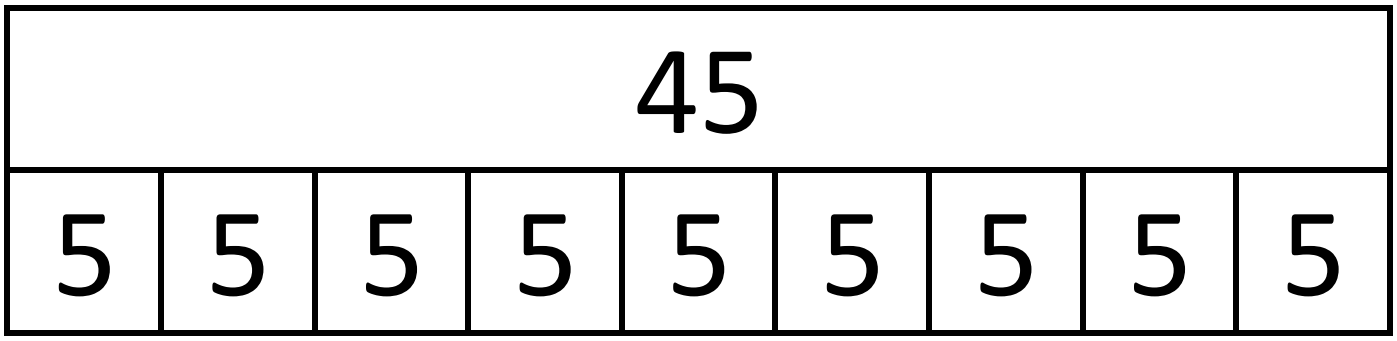
(9 x 2) + (9 x 2)

Array



9 x 5 = 45

Bar model



Repeated addition

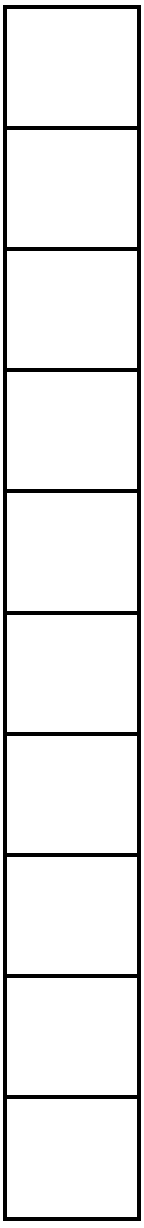
5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5

10×1=__

Area model

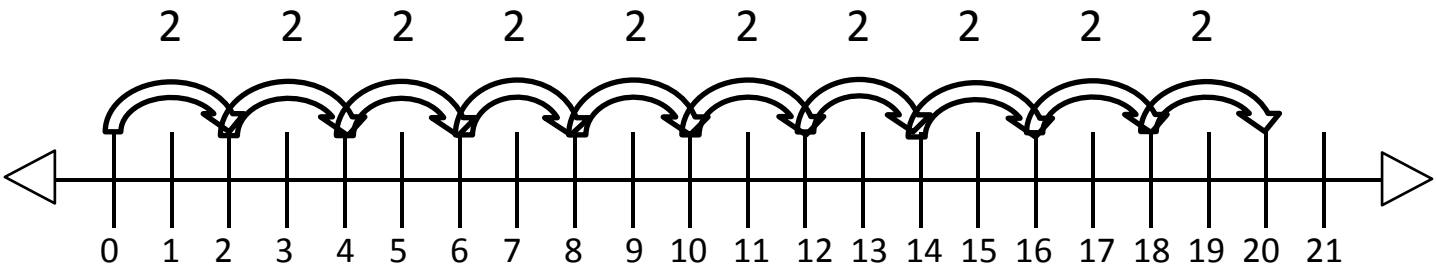
1

10



20 = 10 x _

Number line

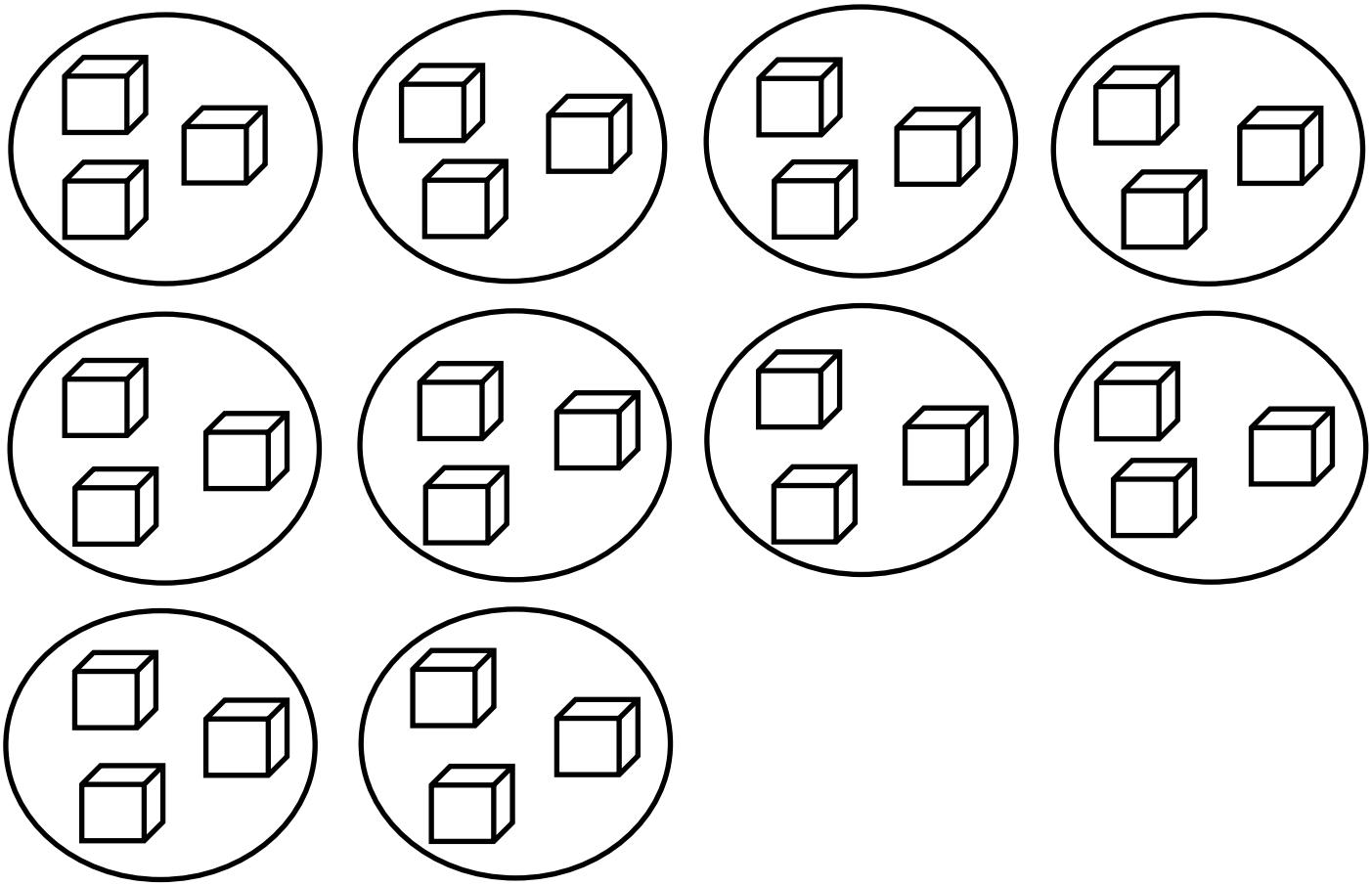


Repeated addition

2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2

10 x _ = 30

Grouping

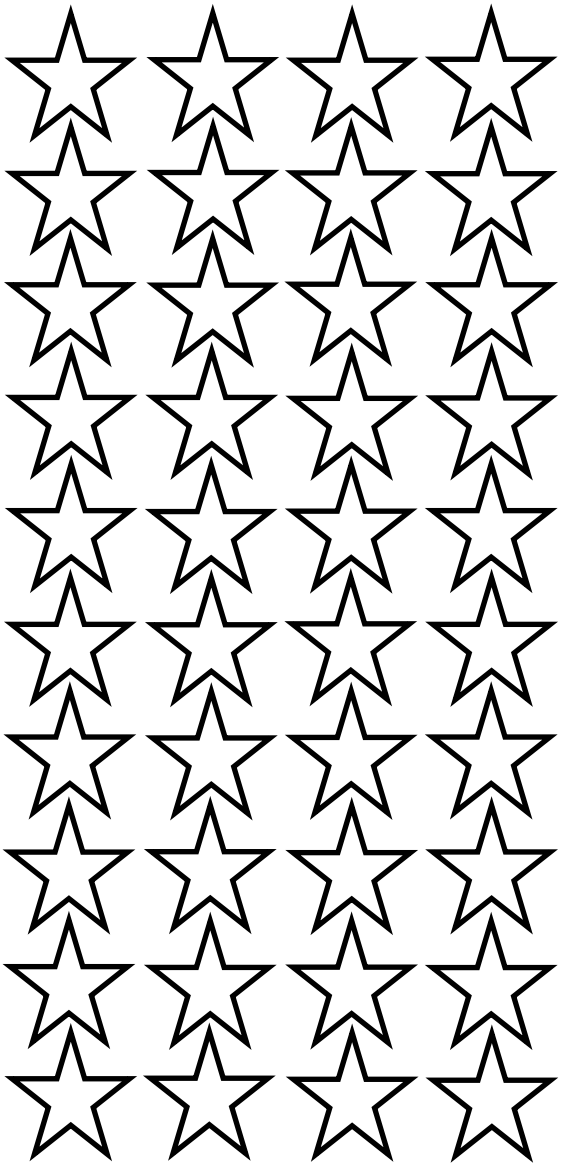


__ = 10 x 4

Decompose

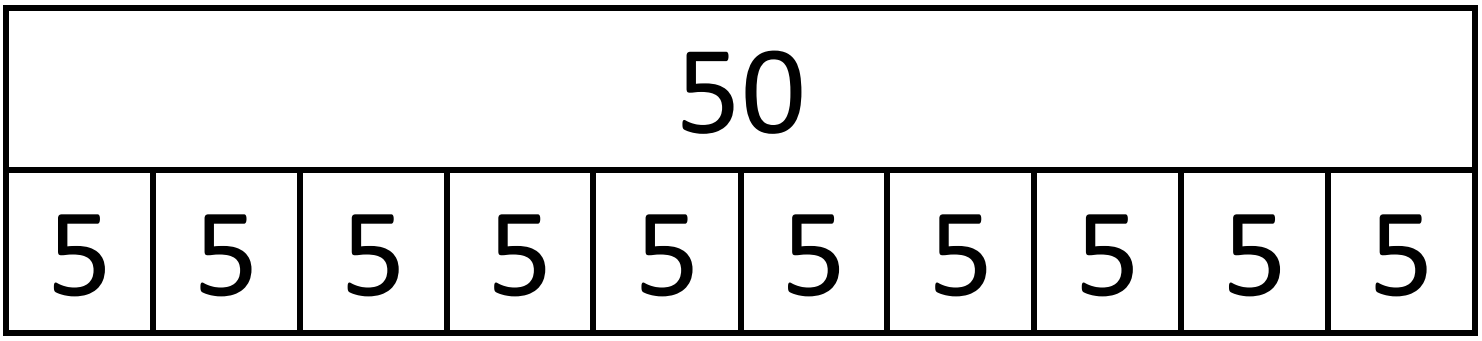
(10 x 2) + (10 x 2)

Array



10 x 5 = 50

Bar model

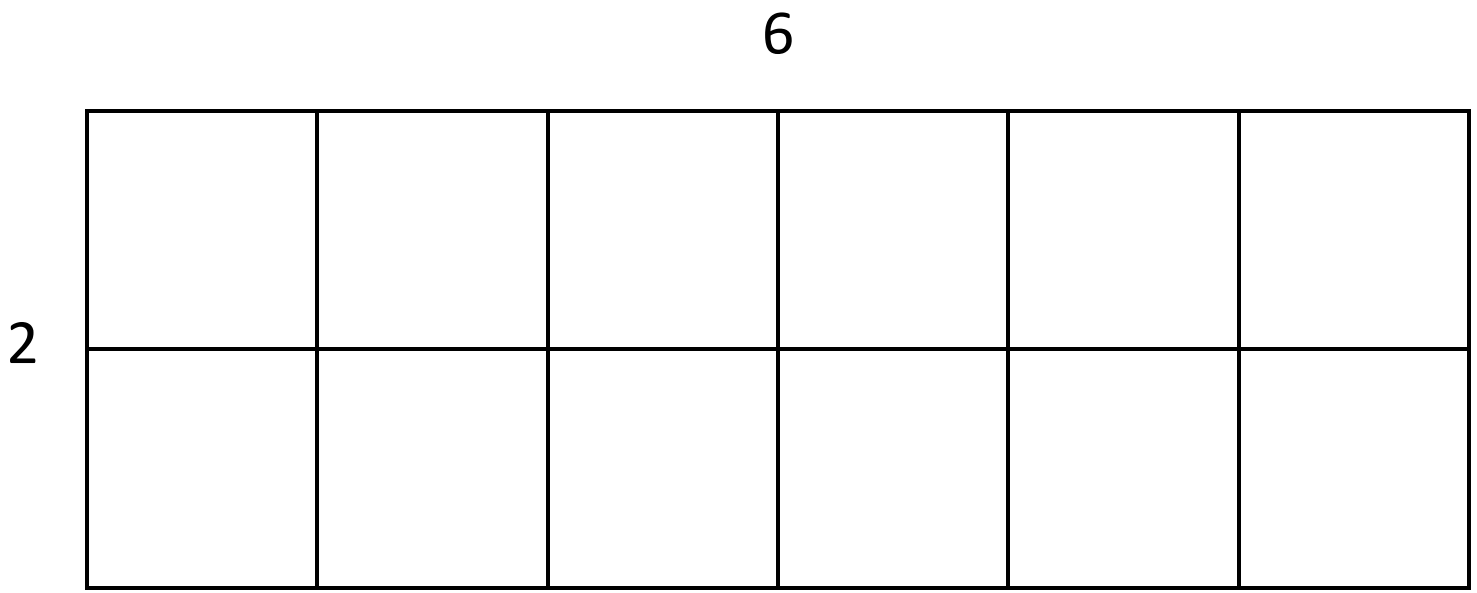


Repeated addition

5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5

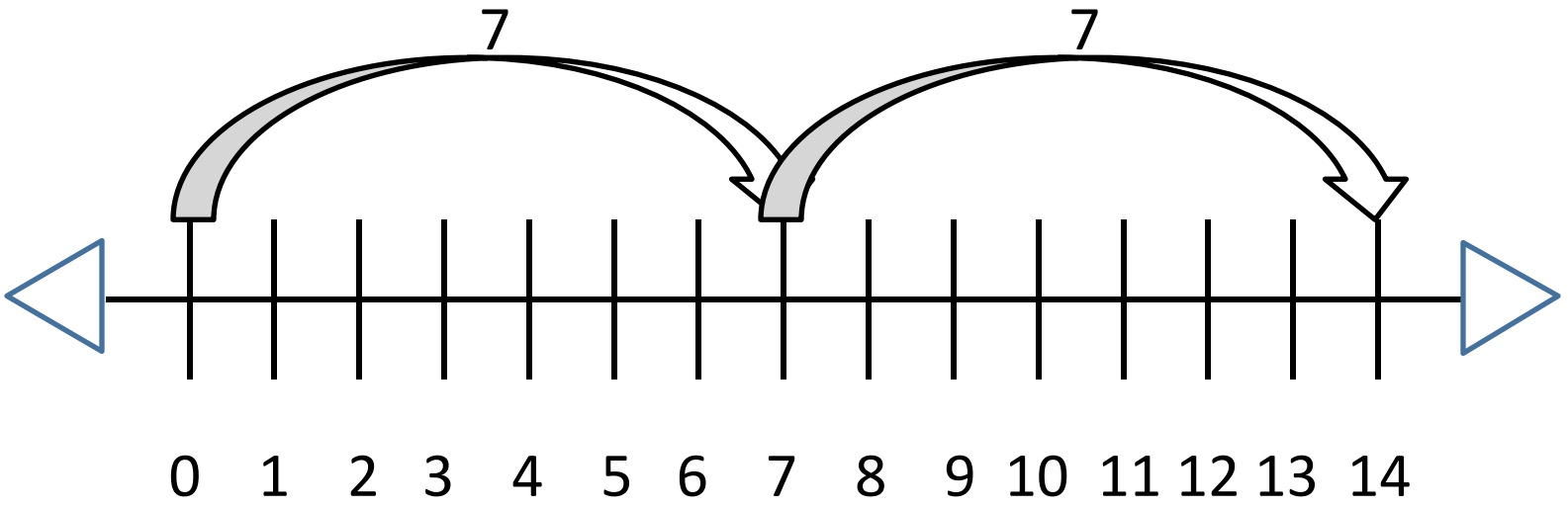
$$2 \times \_ = 12$$

$$(2 \times 3) + (2 \times 3) =$$

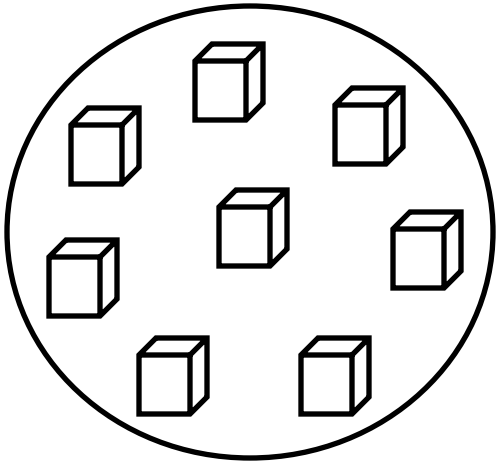


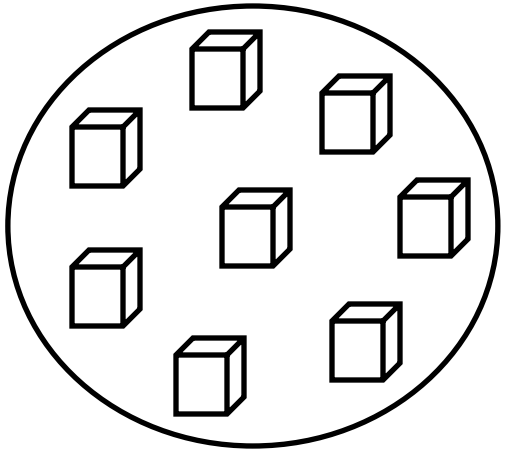
$$2 \times 7 = 14$$

$$(2 \times 2) + (2 \times 5) =$$



16 = 2 x _





__ = 2 x 9

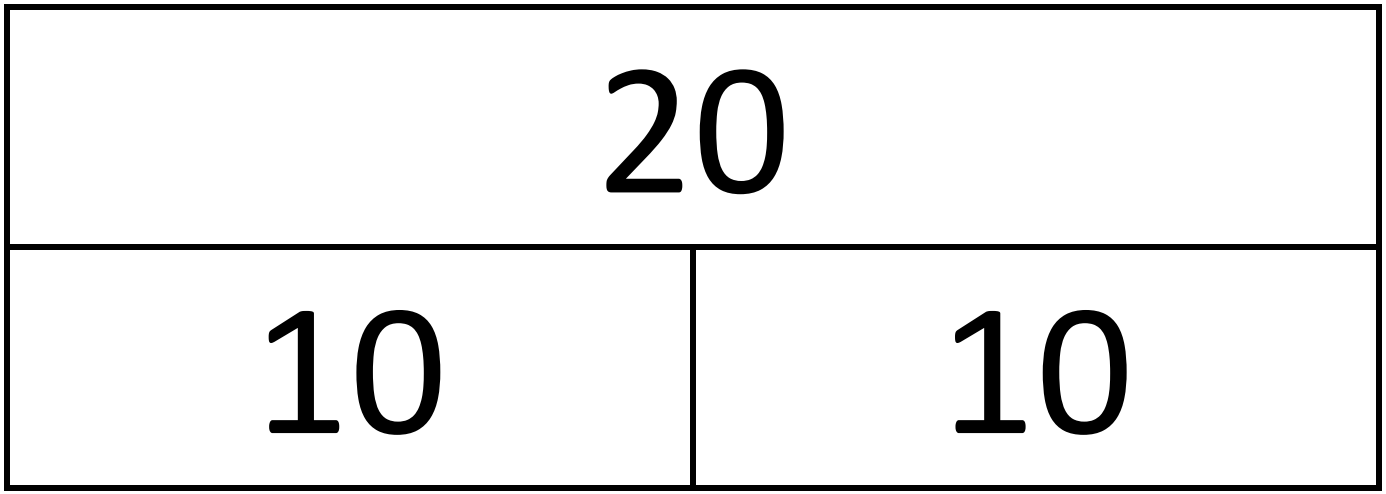
Array

Repeated addition

9 + 9

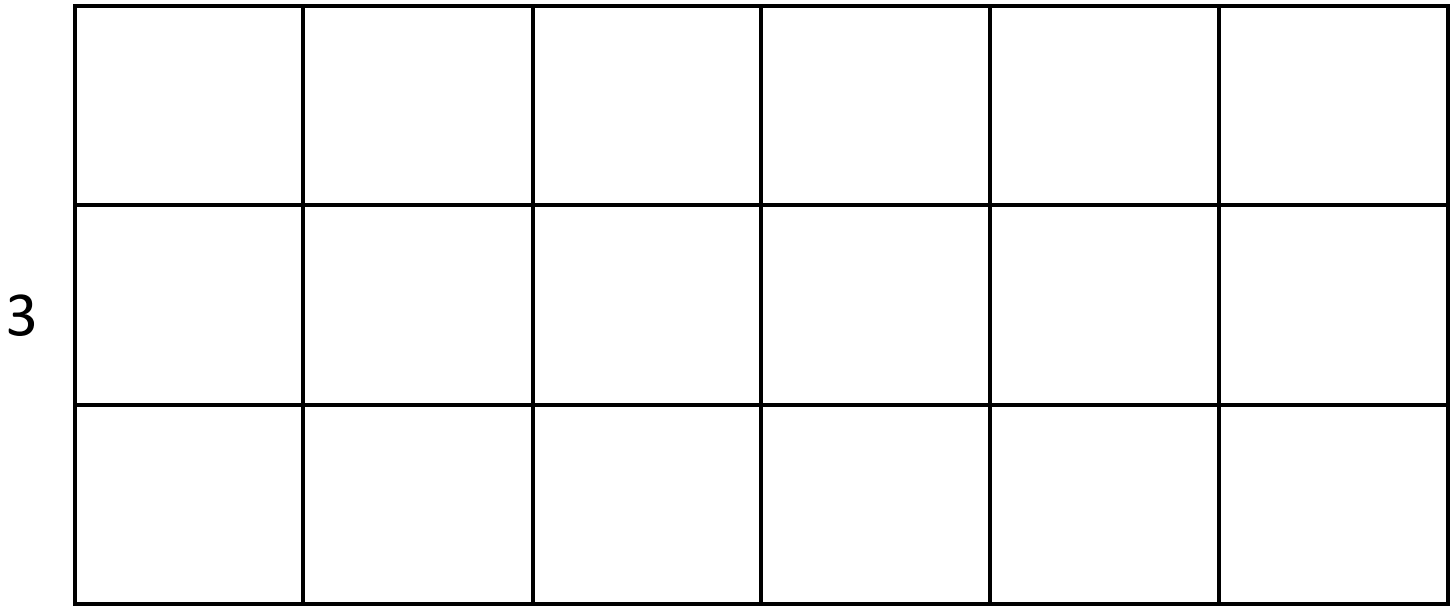
20 = 2 x 10

Bar model



3 x _ = 18

Area model

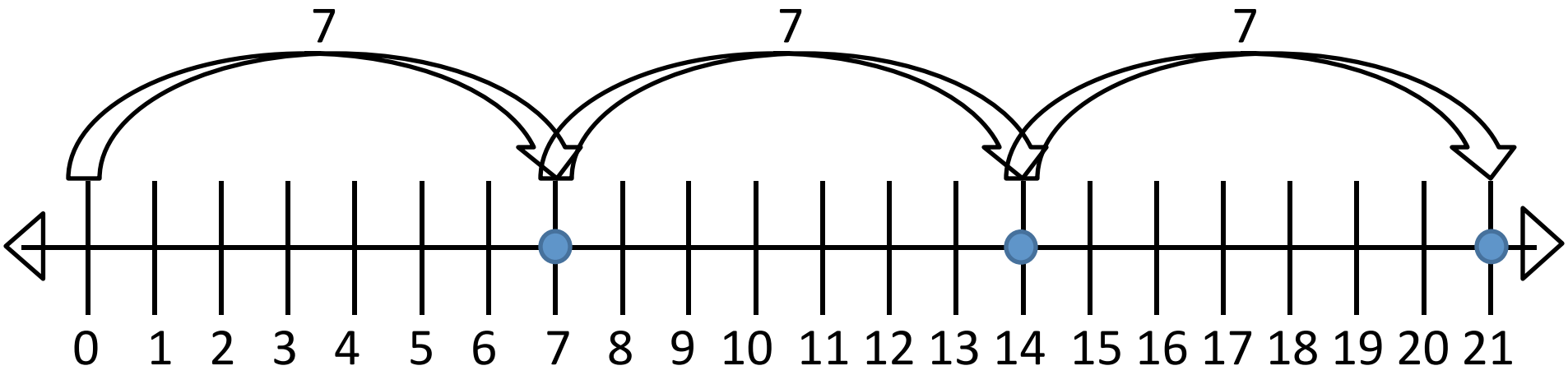


3 x 7 = 21

Decompose

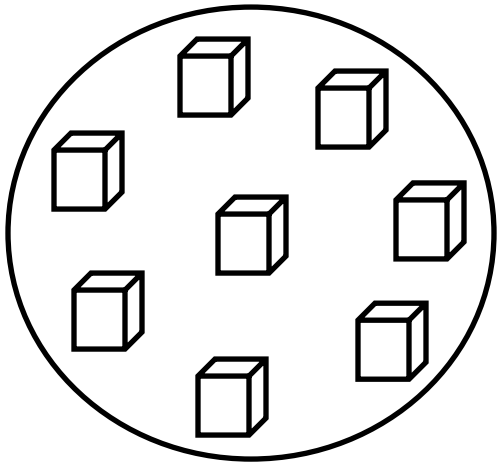
(3 x 2) + (3 x 5) =

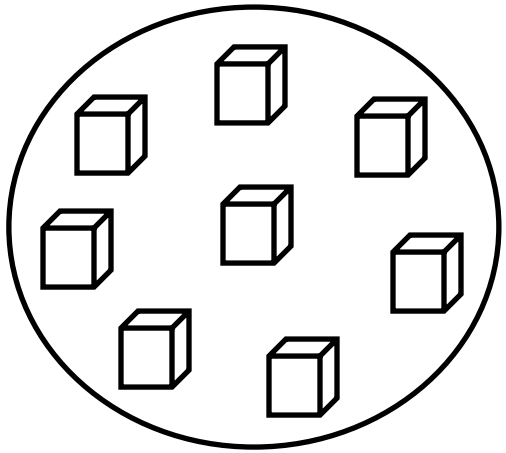
Number line

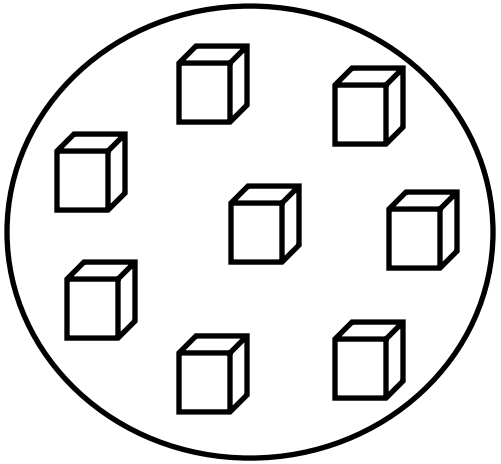


24 = 3 x _

Grouping







__ = 3 x 9

Array

Repeated addition

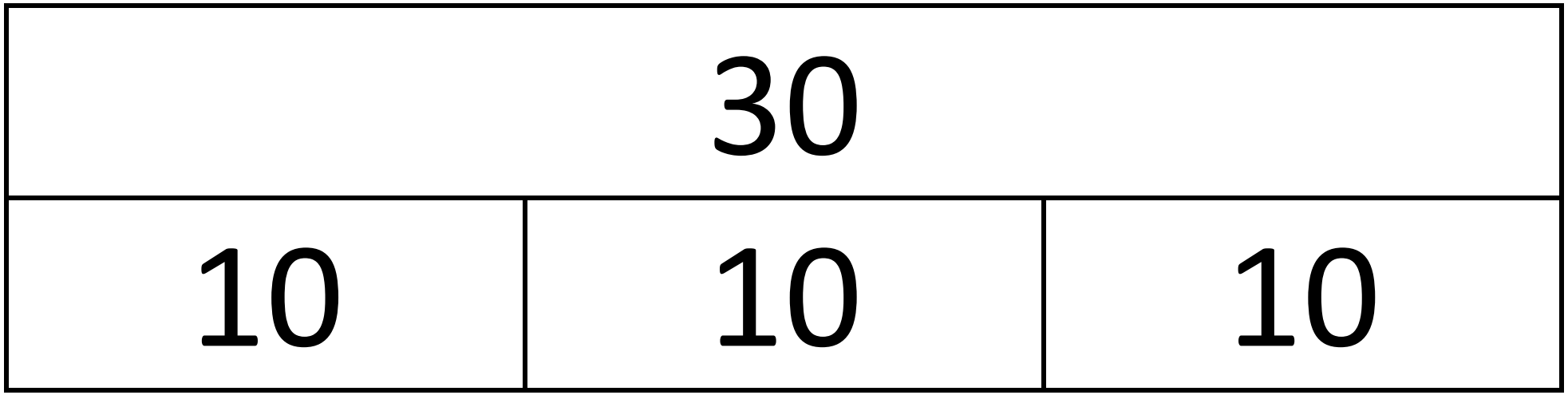
9 + 9 + 9

30 = 3 x 10

Decompose

(3 x 5) + (3 x 5)

Bar model

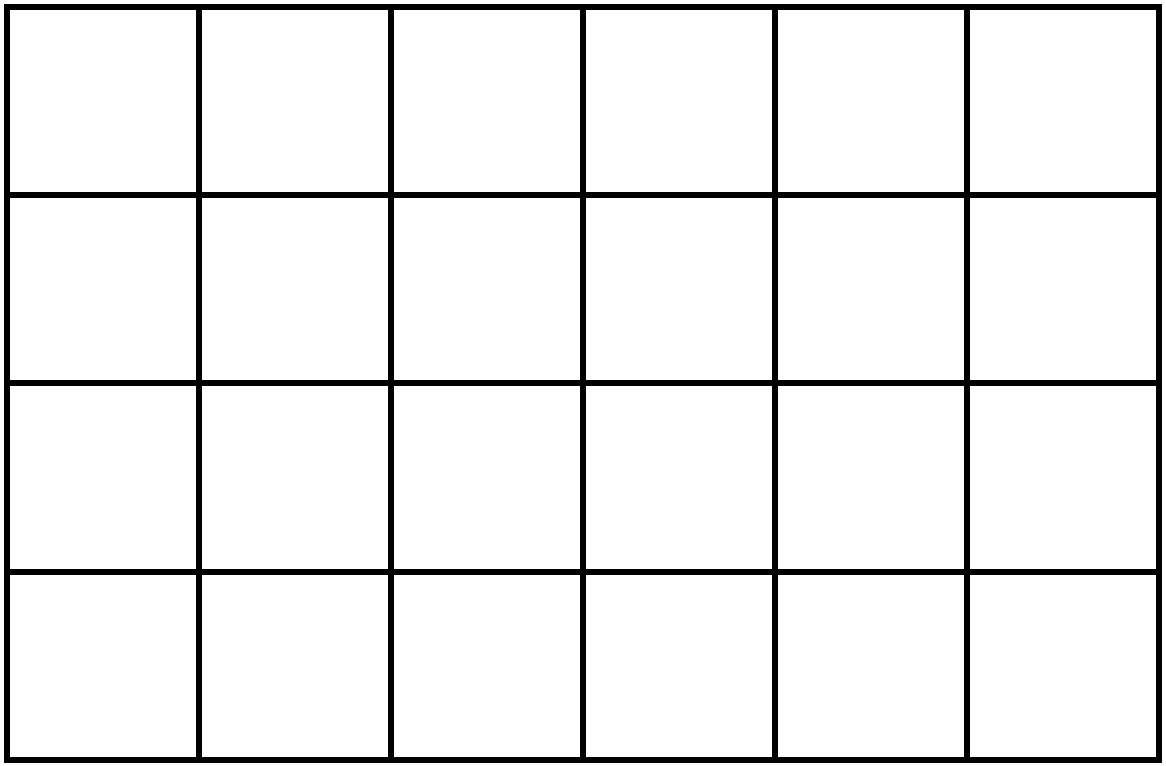


4 x _ = 24

Area model

6

4

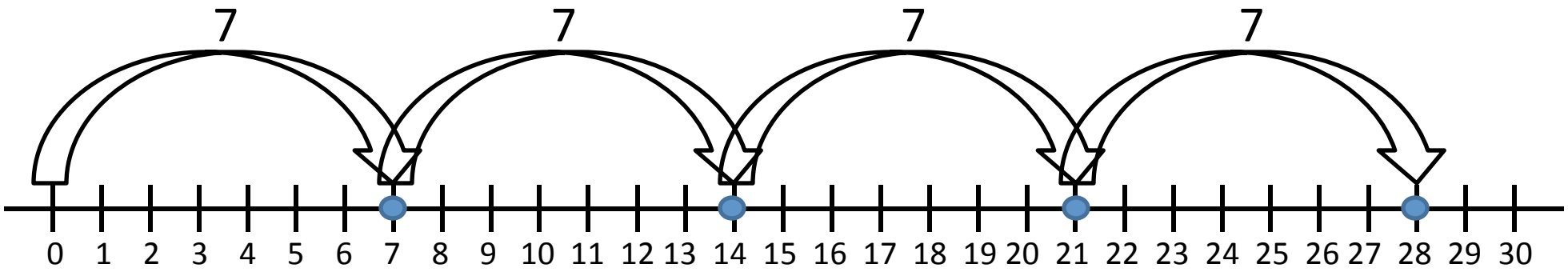


4 x 7 = 28

Decompose

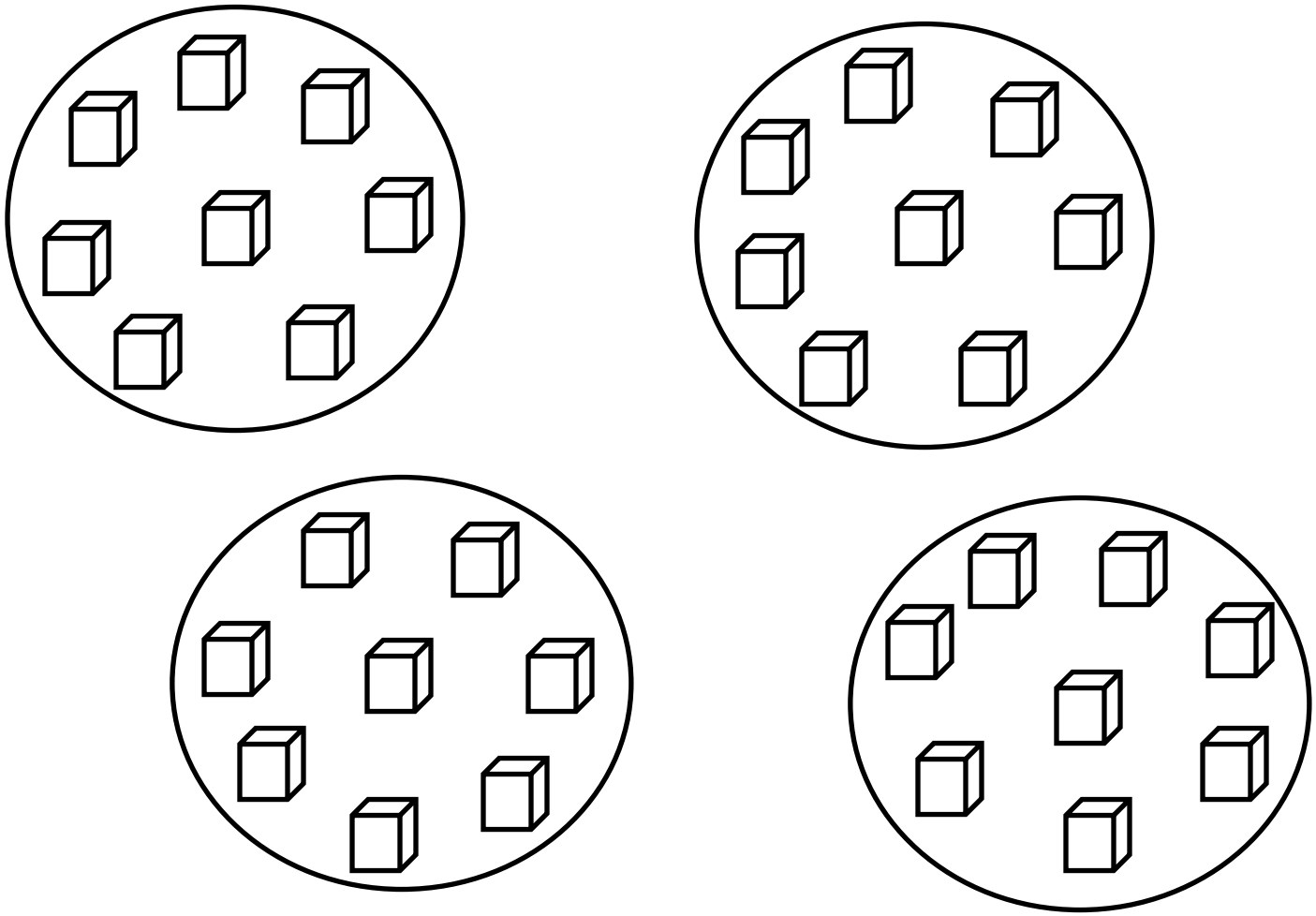
(4 x 2) + (4 x 5) =

Number line



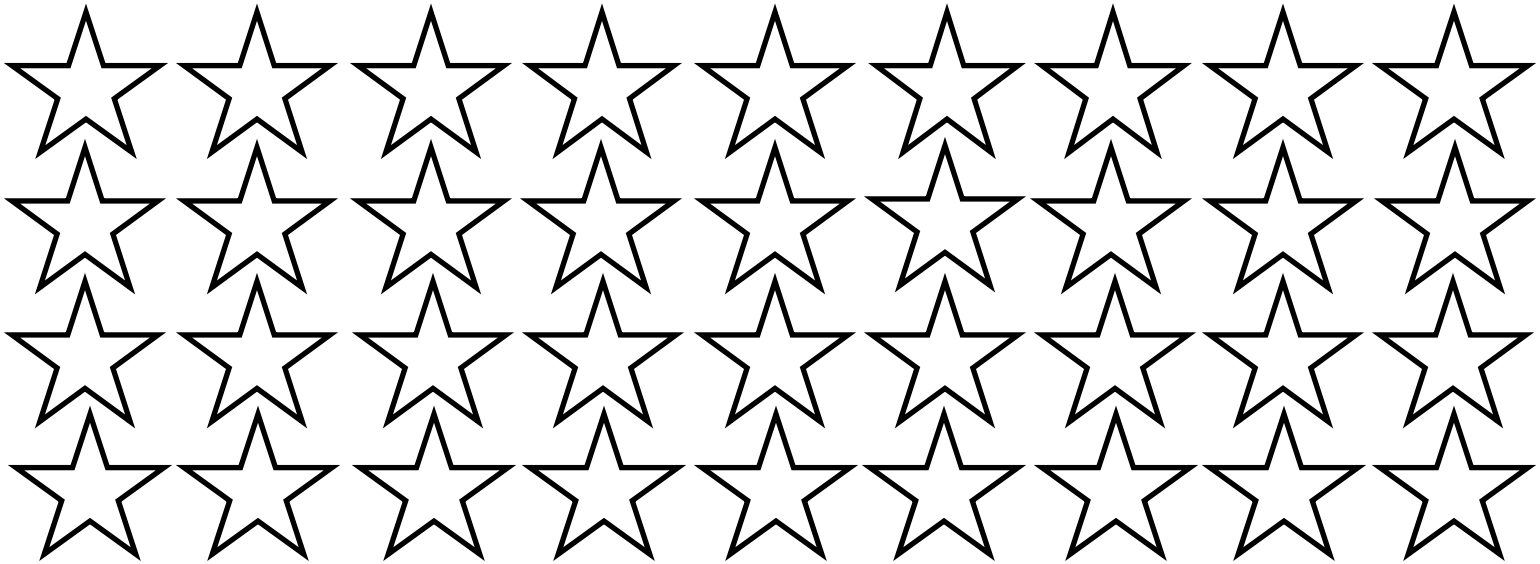
32 = 4 x _

Grouping



___ = 4 x 9

Array



Repeated addition

9 + 9 + 9 +9

40 = 4 x 10

Decompose

(4 x 5) + (4 x 5)

Bar model

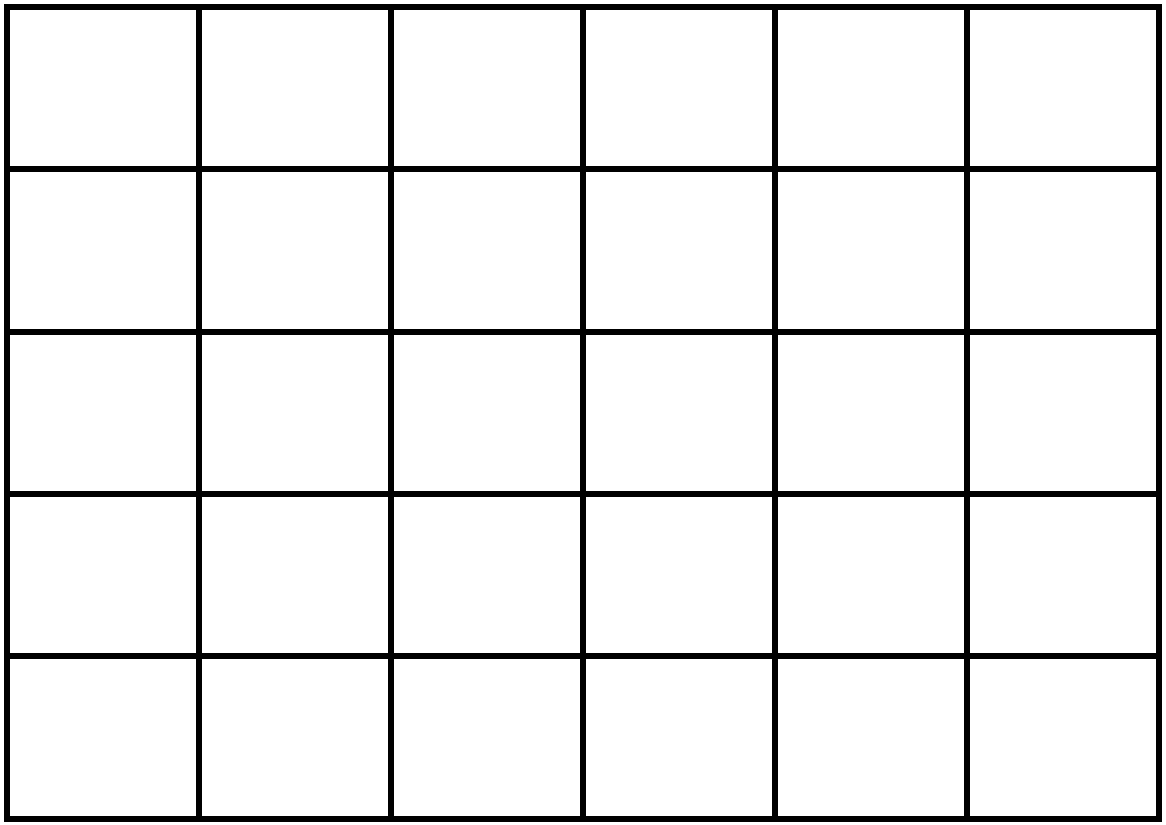
40			
10	10	10	10

5 x _ = 30

Area model

6

5

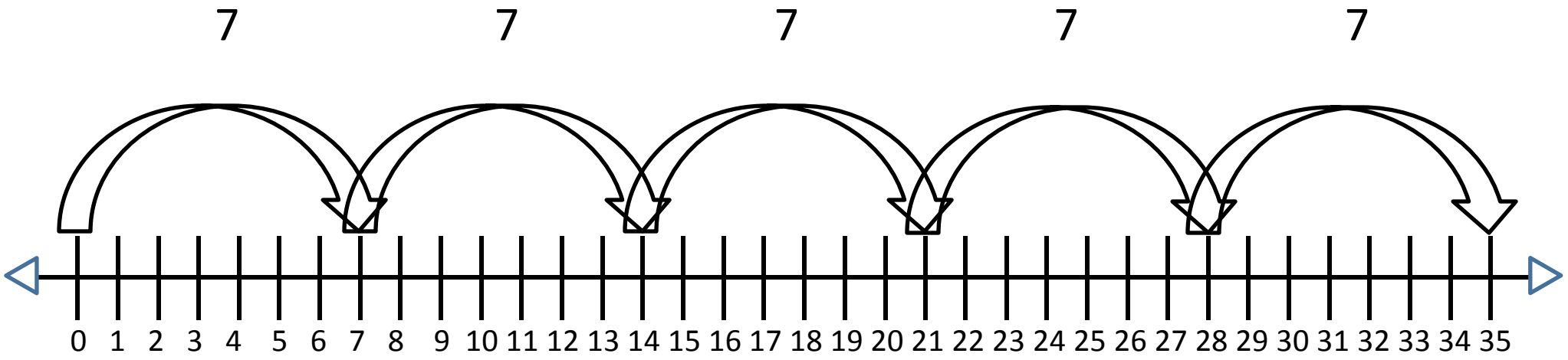


5 x 7 = 35

Decompose

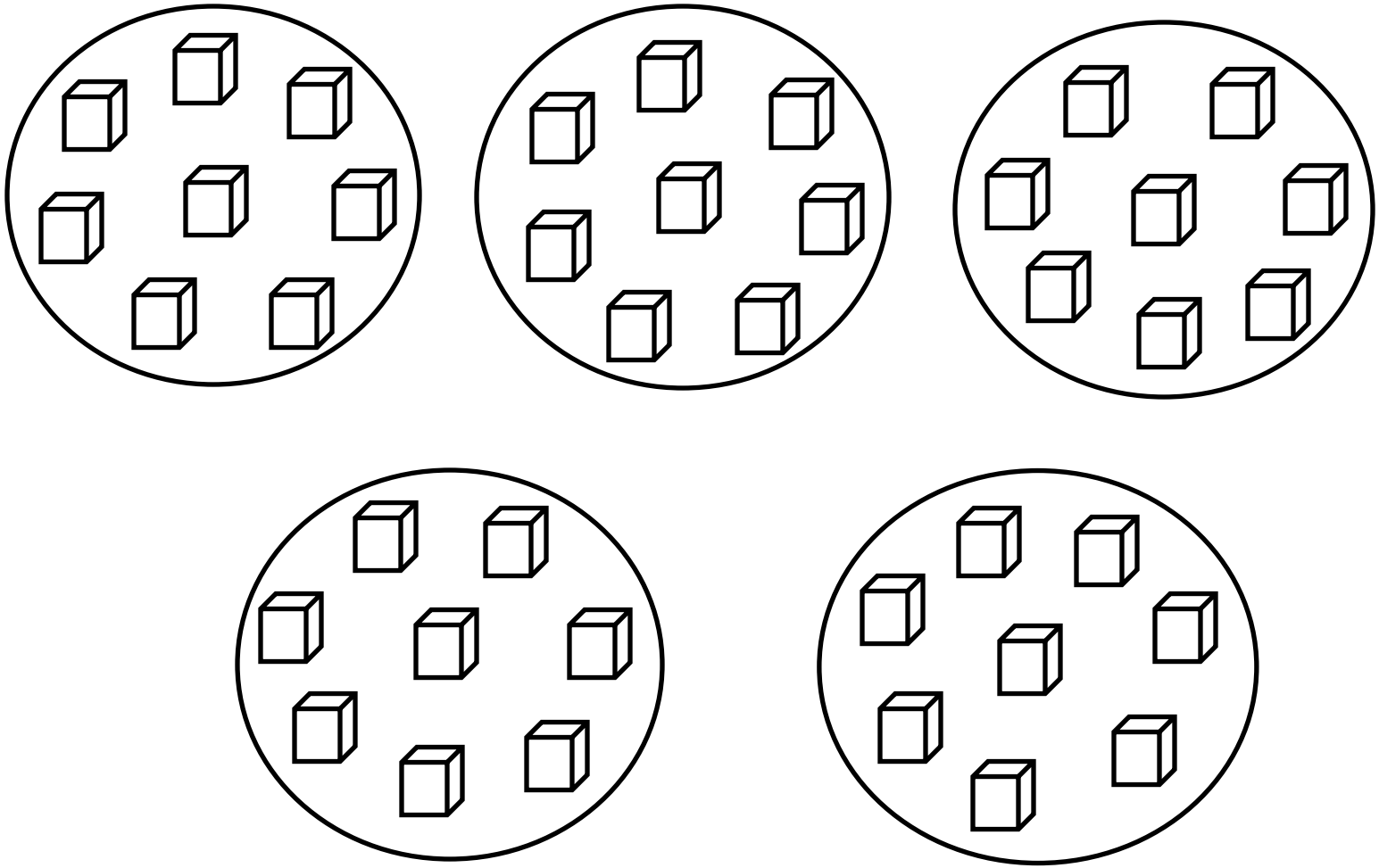
(5 x 2) + (5 x 5) =

Number line



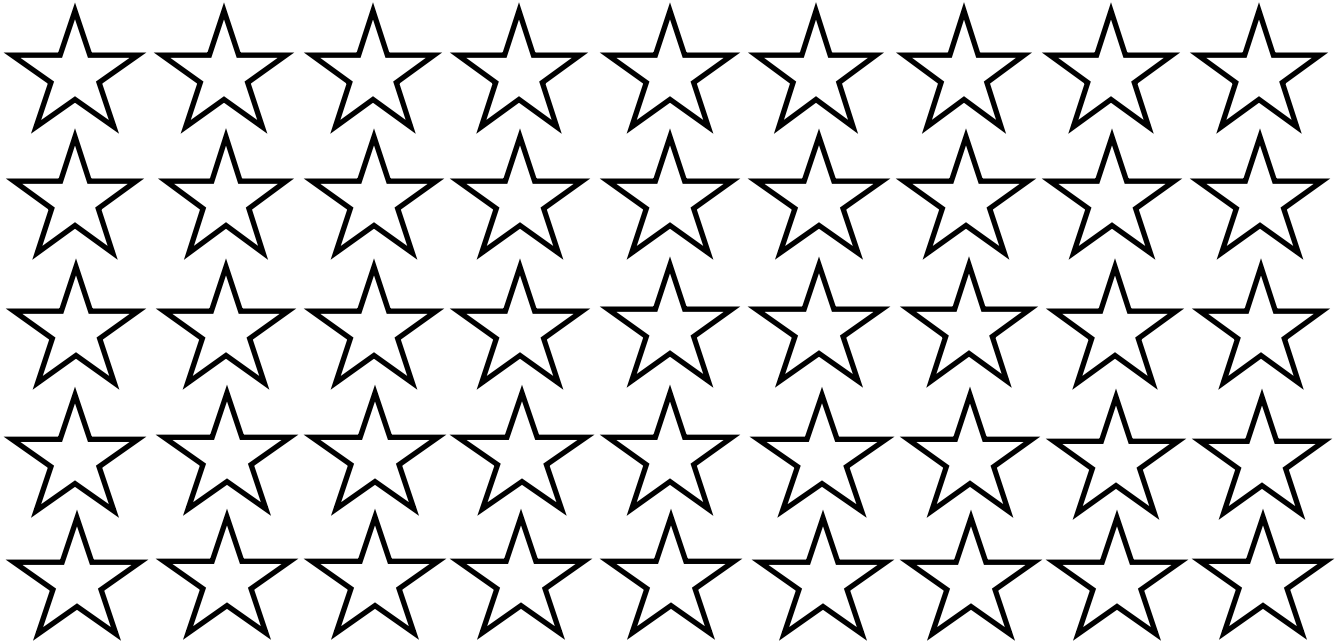
40 = 5 x _

Grouping



__ = 5 x 9

Array



Repeated addition

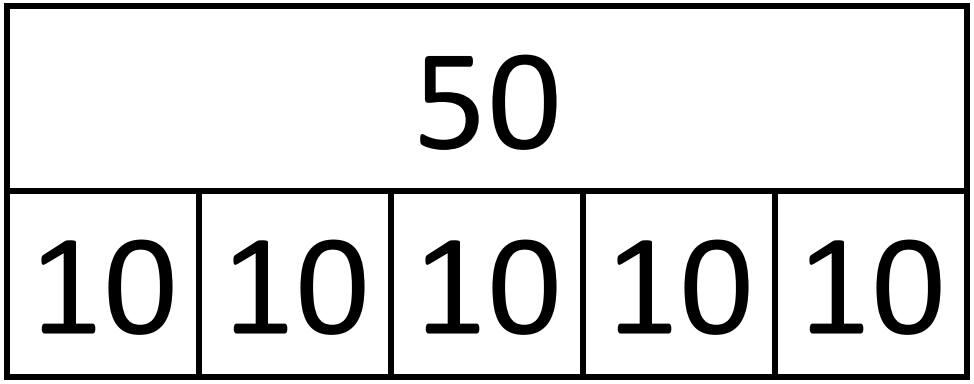
9 + 9 + 9 +9 + 9

50 = 5 x 10

Decompose

(5 x 5) + (5 x 5)

Bar model

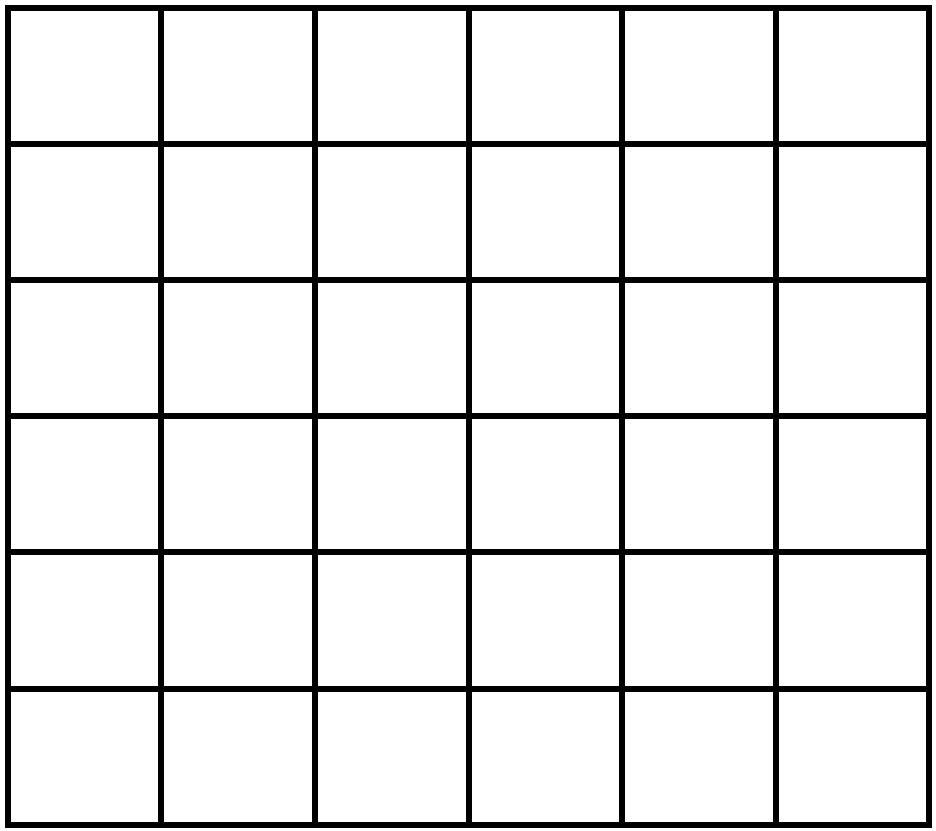


6 x _ = 36

Area model

6

6

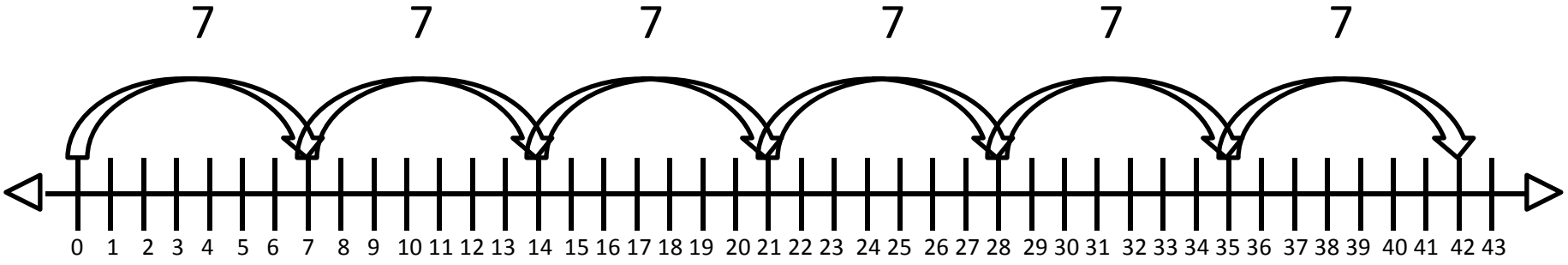


6 x 7 = 42

Decompose

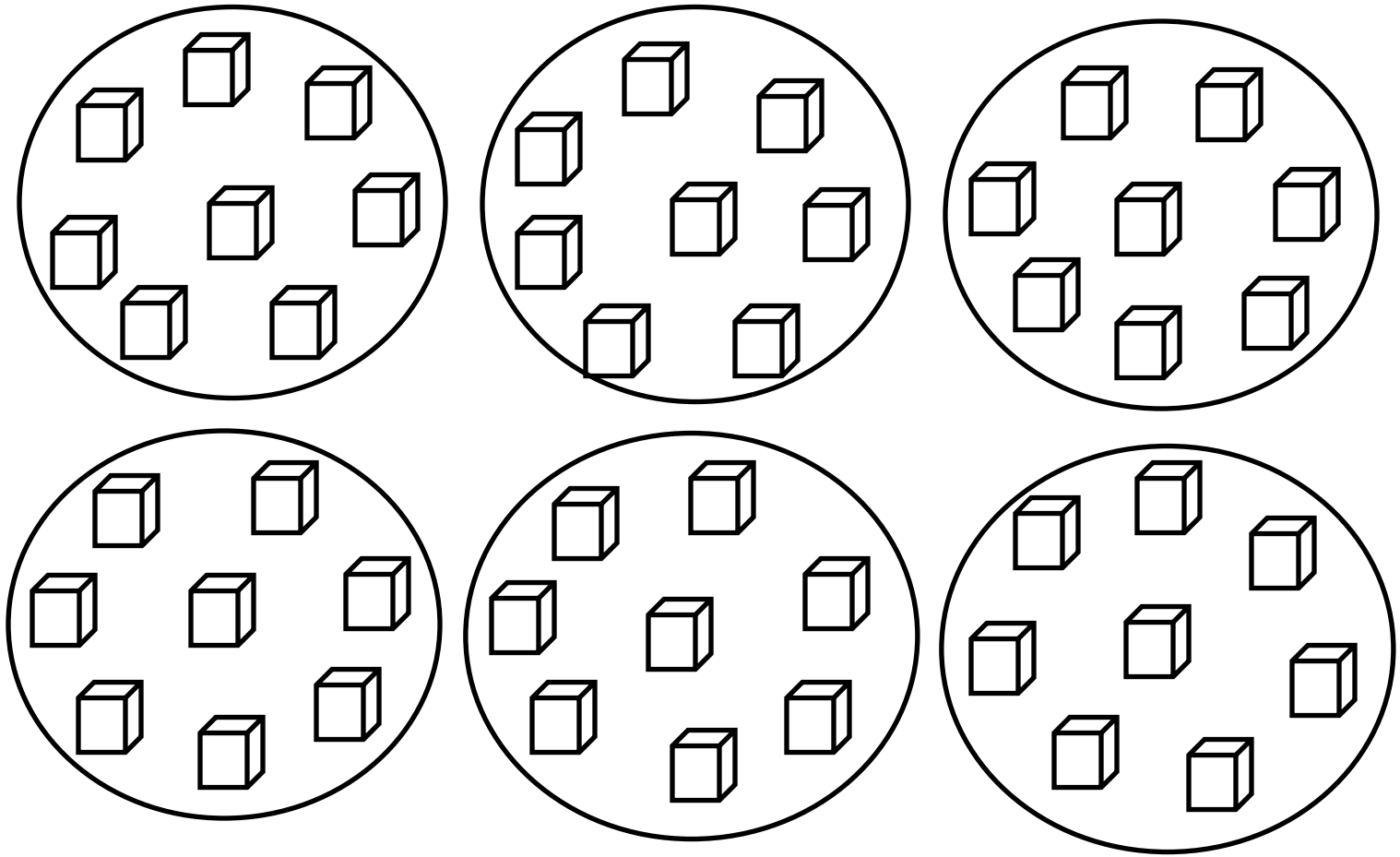
(6 x 2) + (6 x 5) =

Number line



48 = 6 x _

Grouping



__ = 6 x 9

Array

Repeated addition

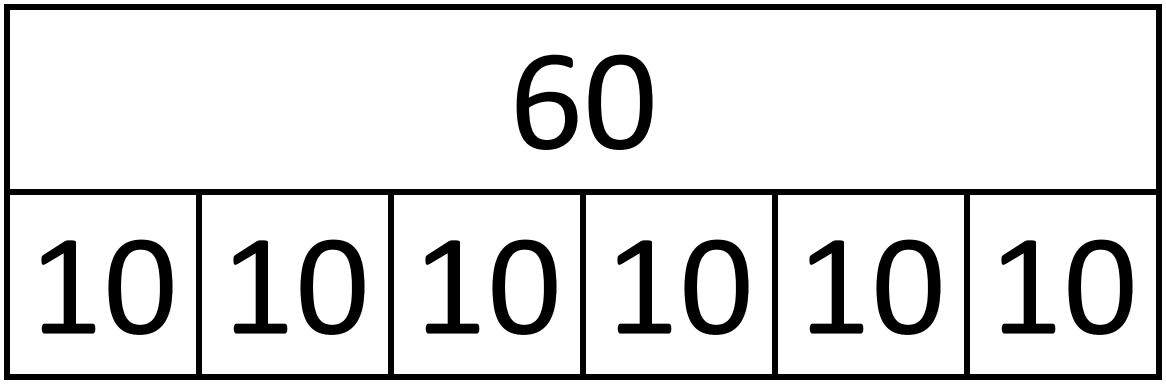
9 + 9 + 9 + 9 + 9 + 9

60 = 6 x 10

Decompose

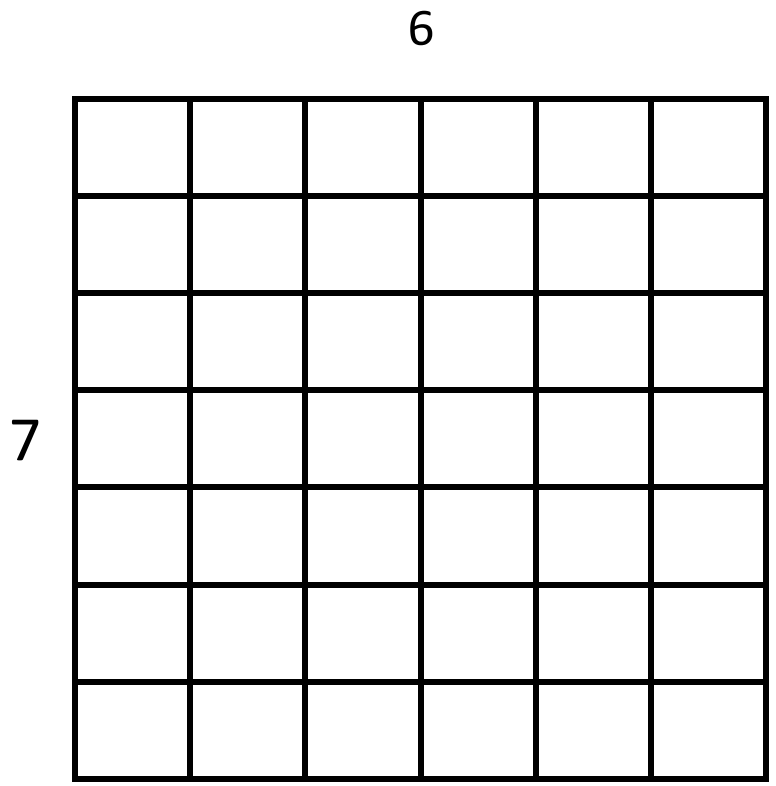
(6 x 5) + (6 x 5)

Bar model



7 x _ = 42

Area model

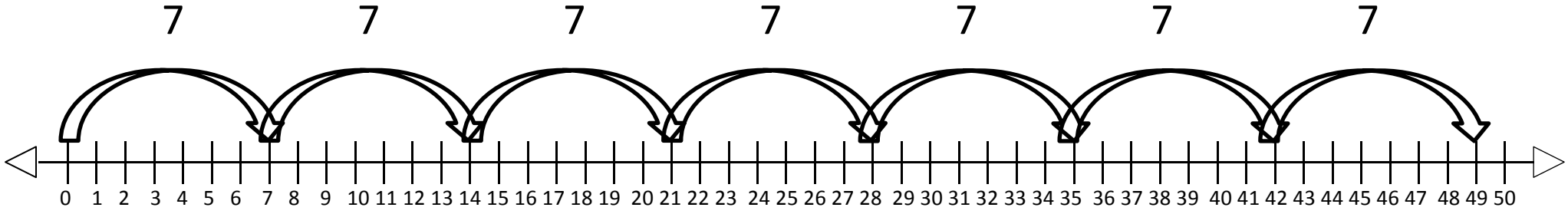


7 x 7 = 49

Decompose

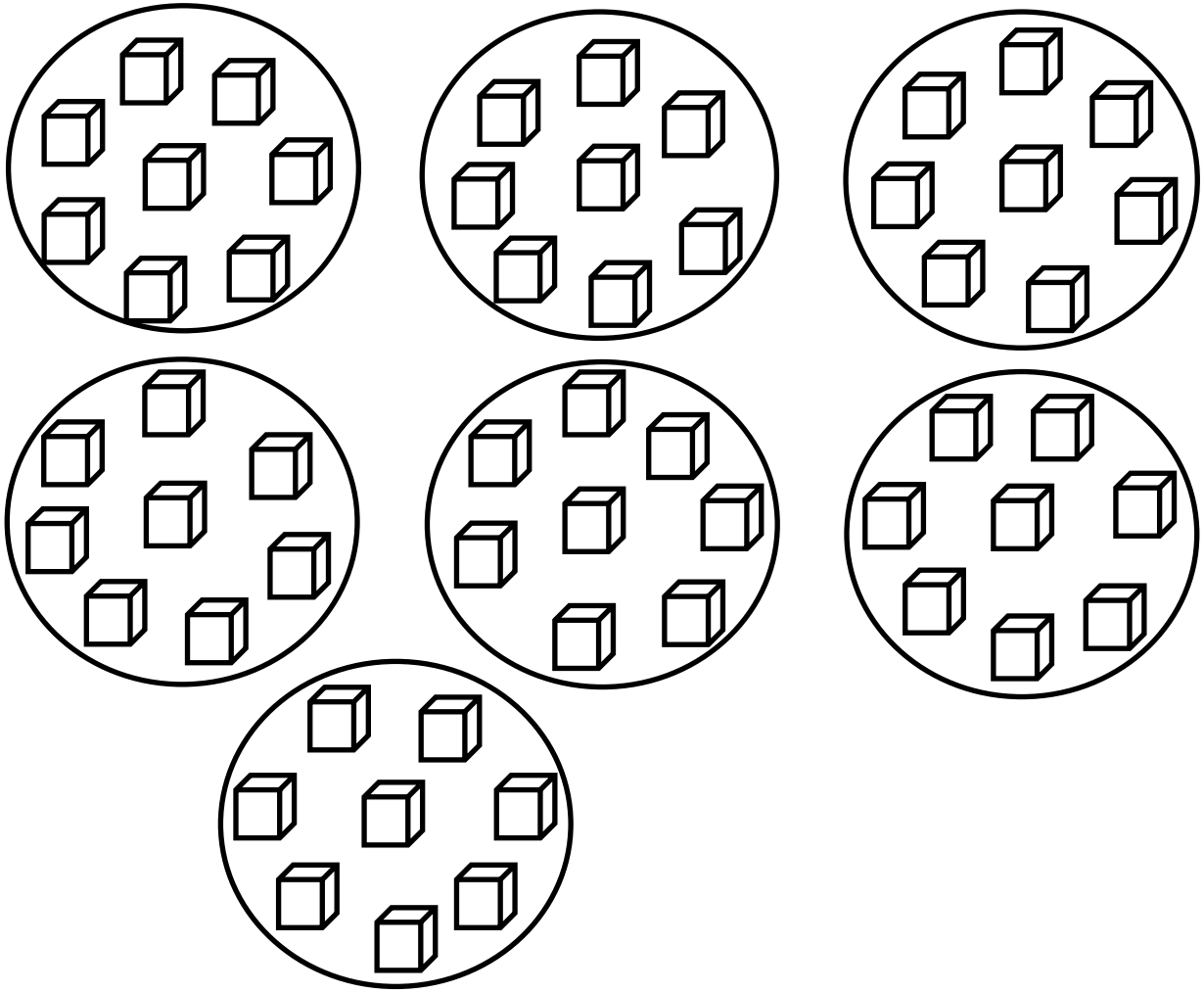
(7 x 2) + (7 x 5) =

Number line



56 = 7 x _

Grouping



___ = 7 x 9

Array

Repeated addition

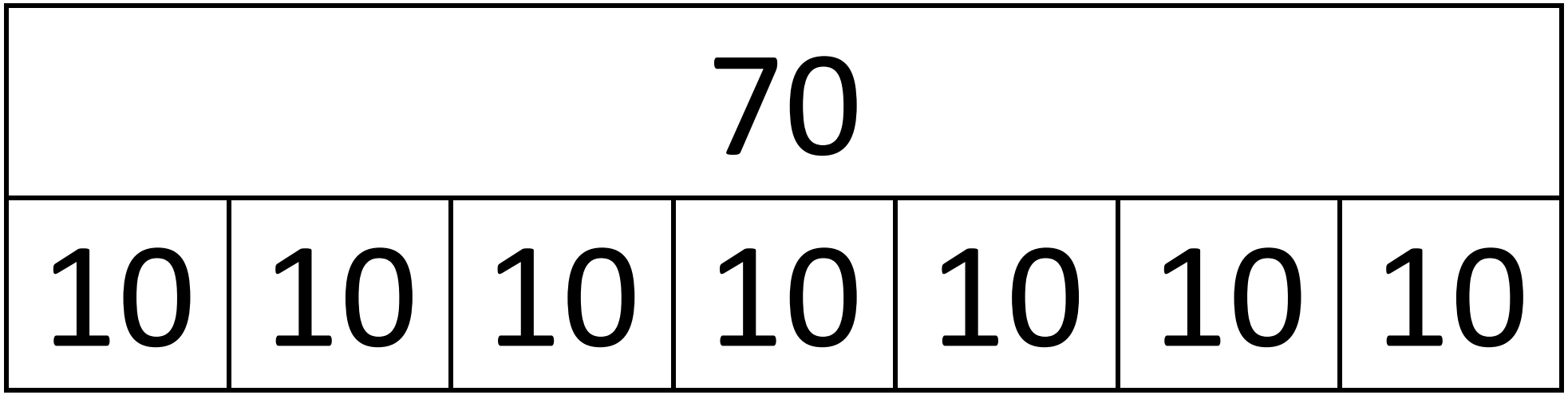
9 + 9 + 9 +9 + 9 + 9 + 9

70 = 7 x 10

Decompose

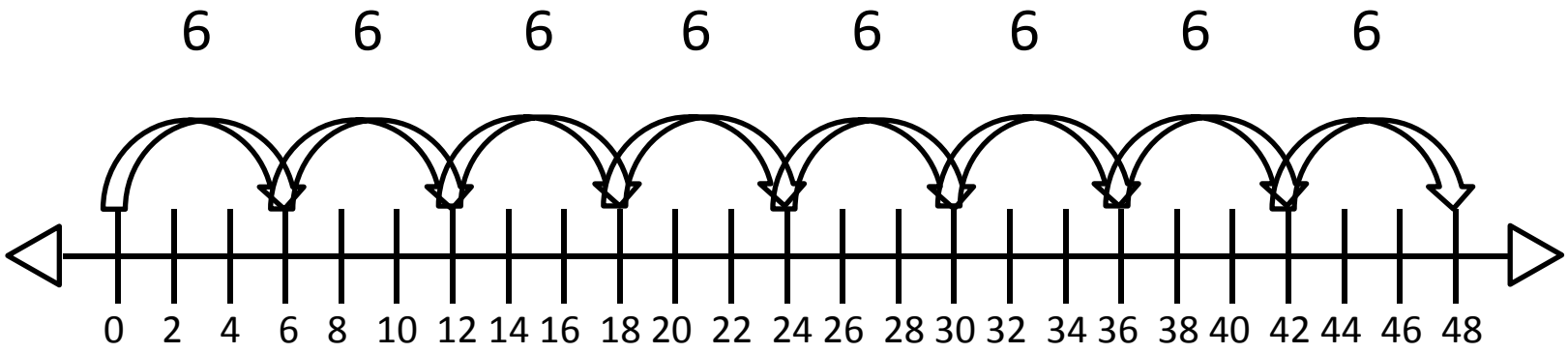
(7 x 5) + (7 x 5)

Bar model



8 x _ = 48

Number line



Repeated Addition

6 + 6 + 6 + 6 + 6 + 6 + 6 + 6

8 x 7 = 56

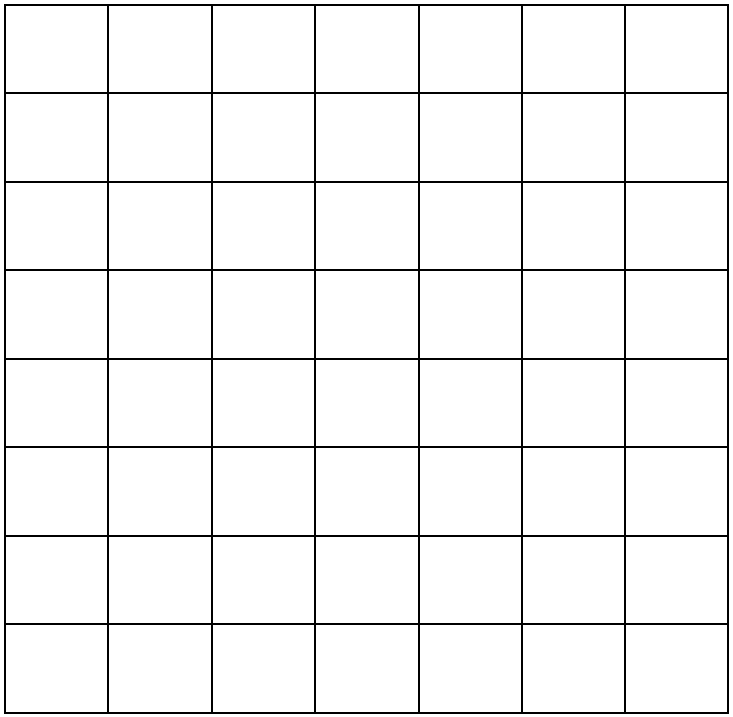
Decompose

(8 x 2) + (8 x 5) =

Area model

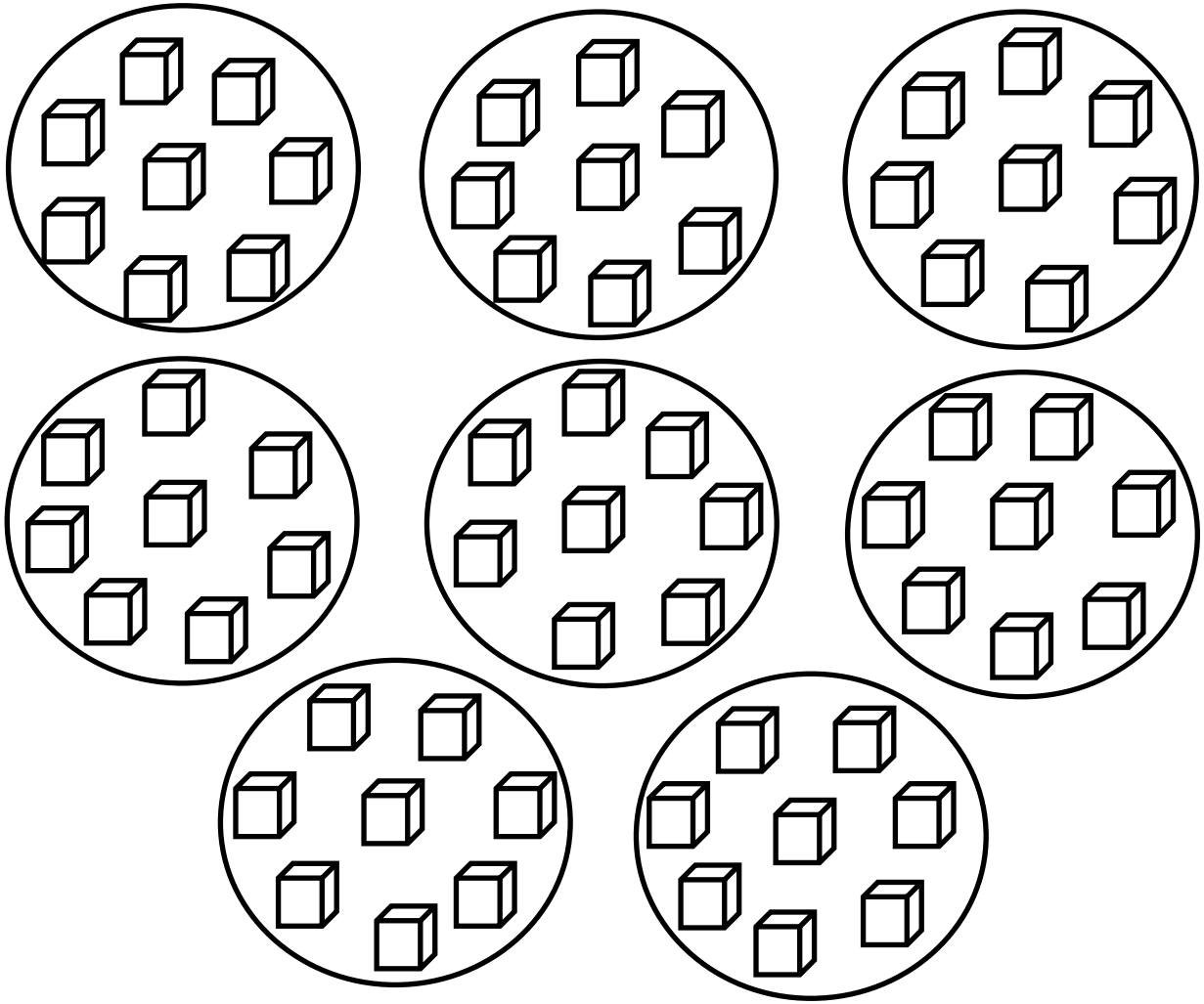
7

8



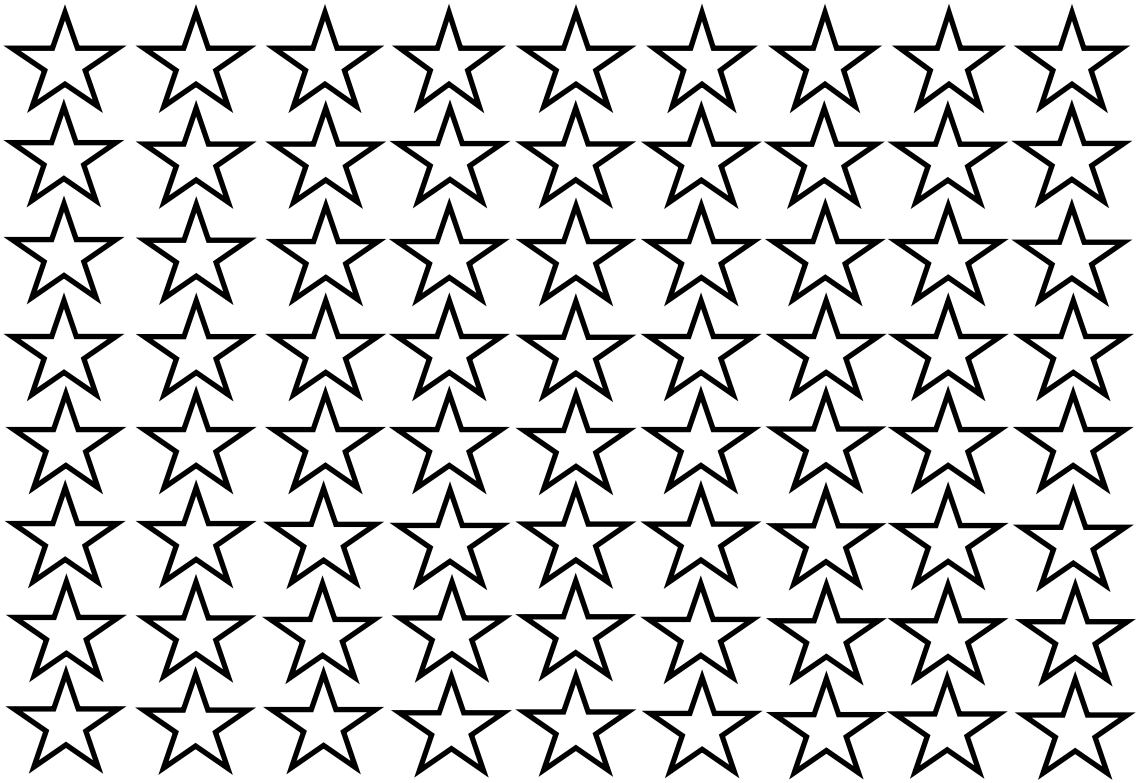
64 = 8 x _

Grouping



__ = 8 x 9

Array

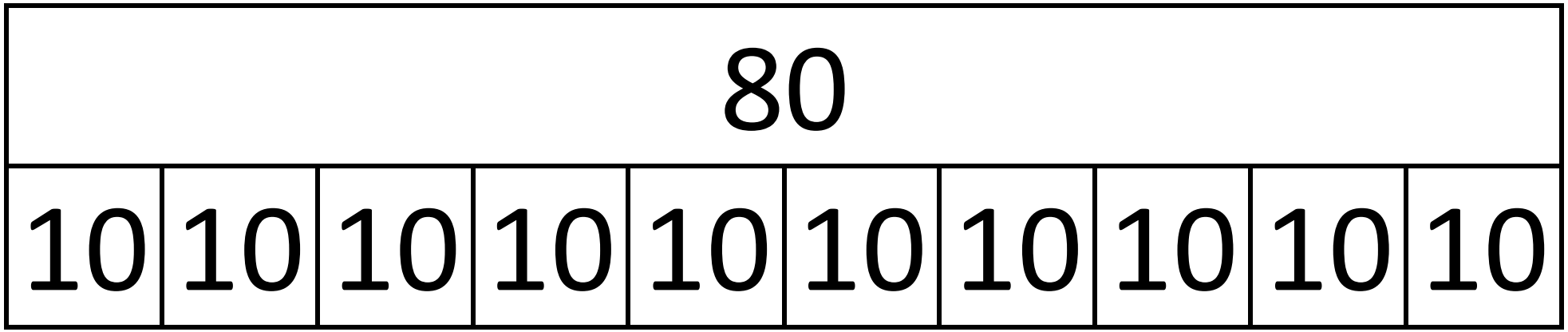


80 = 8 x 10

Decompose

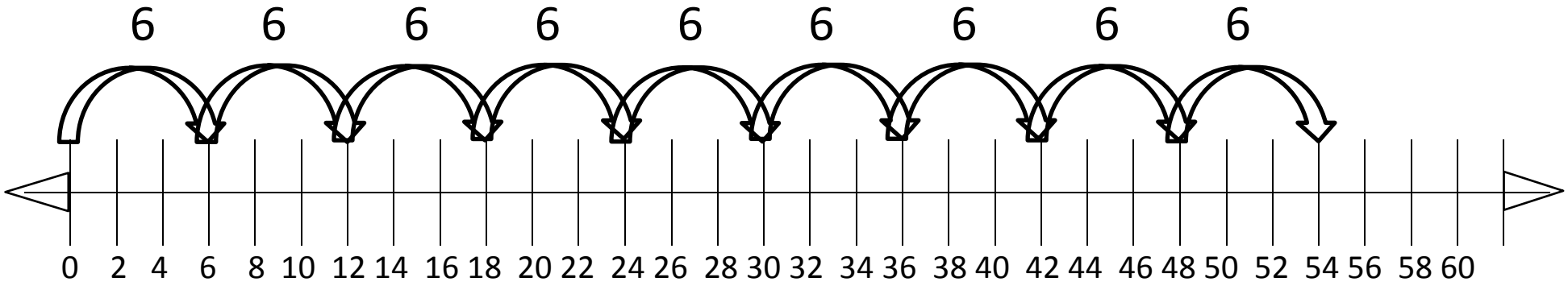
(8 x 5) + (8 x 5)

Bar model



9 x _ = 54

Number line



Repeated Addition

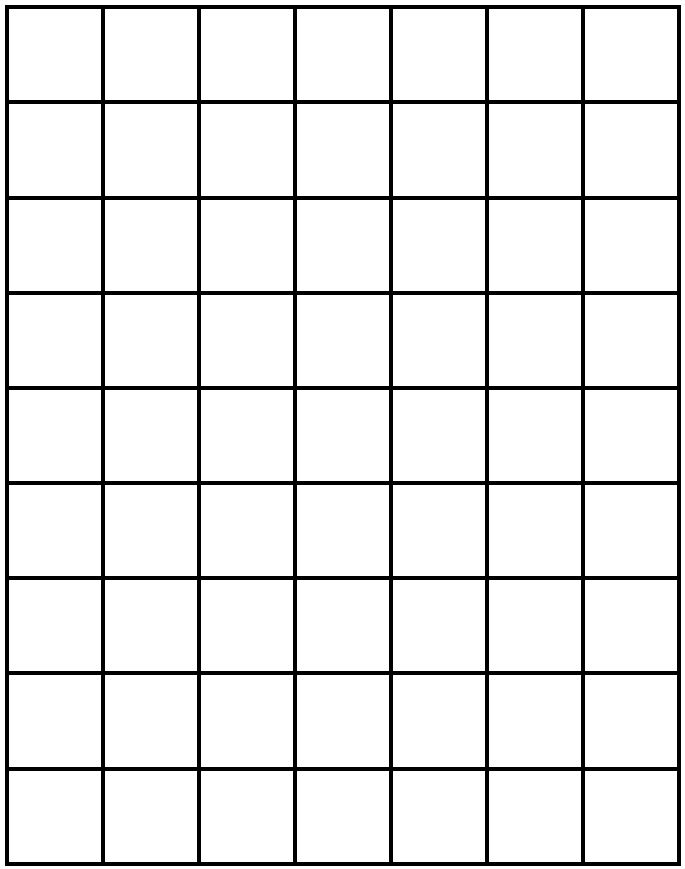
6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6

9 x 7 = 63

Area model

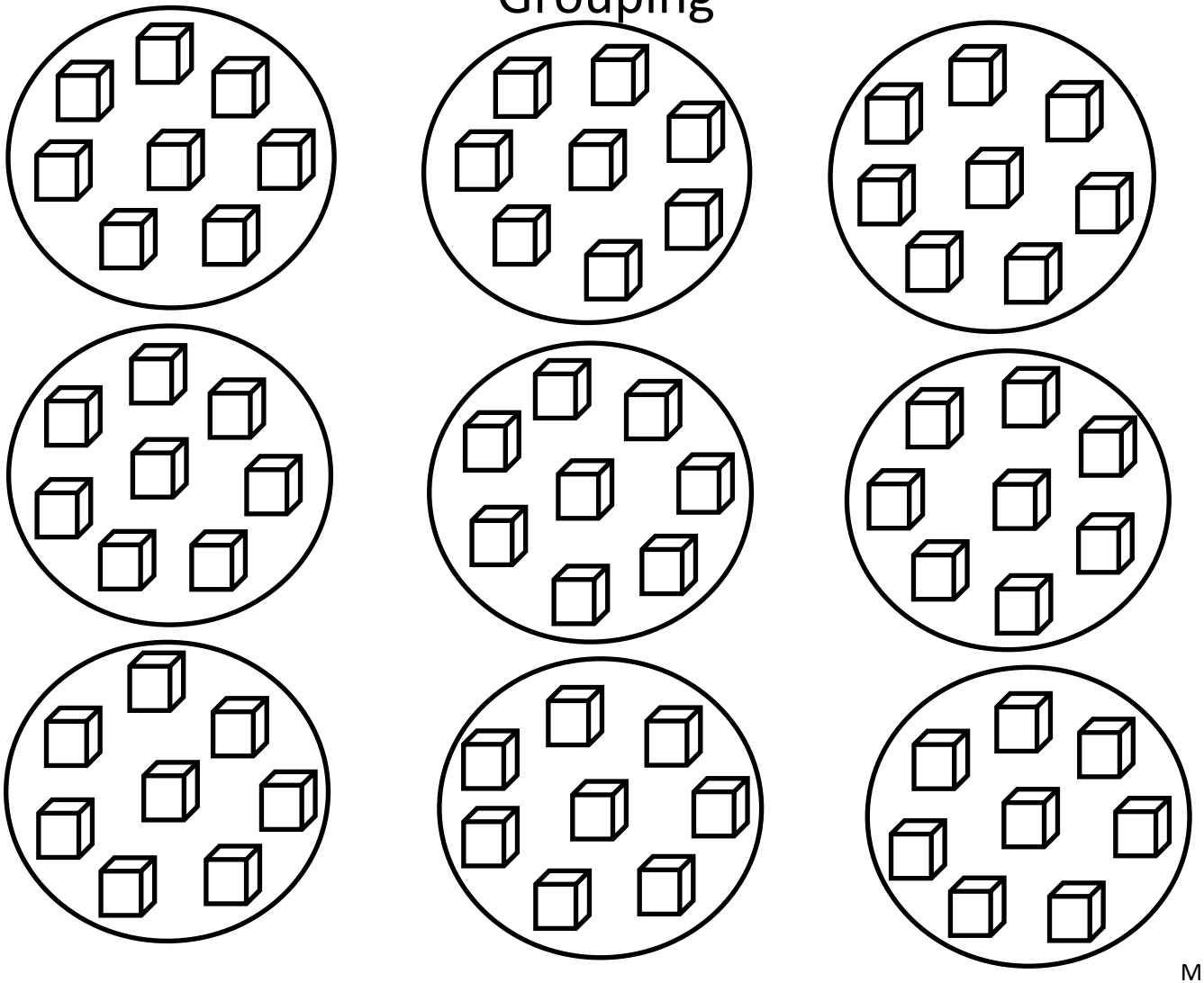
7

9



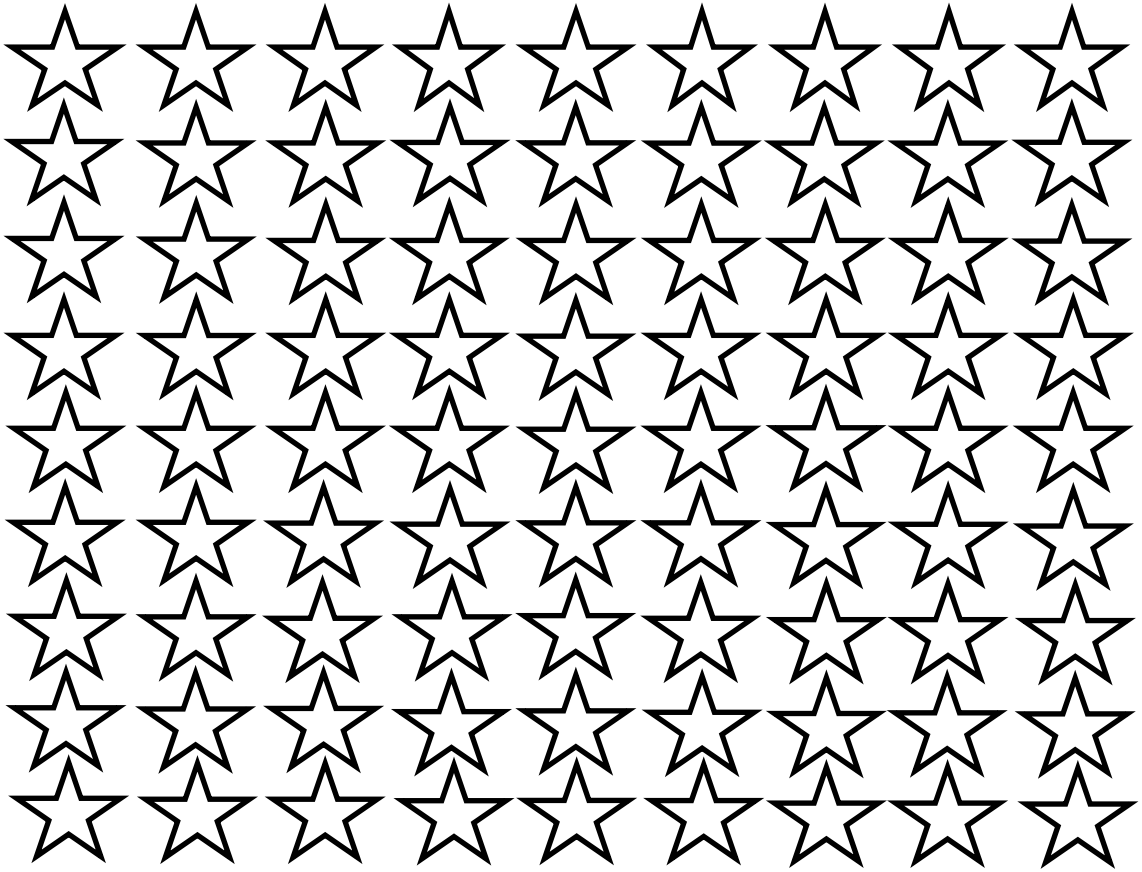
72 = 9 x _

Grouping



__ = 9 x 9

Array

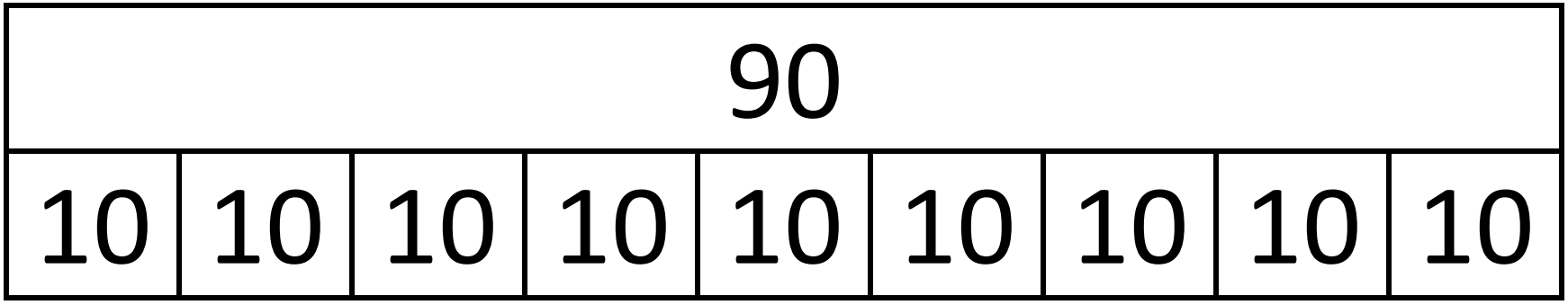


90 = 9 x 10

Decompose

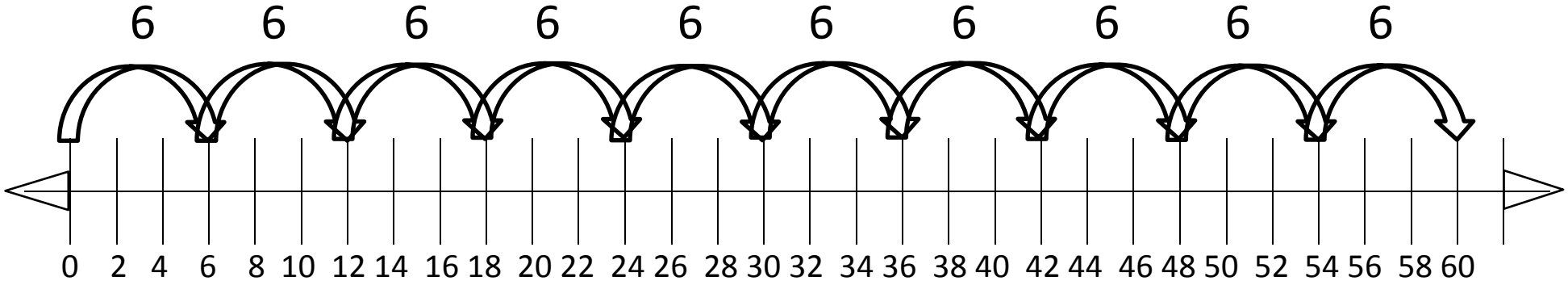
(9 x 5) + (9 x 5)

Bar model



10 x _ = 60

Number line



Repeated Addition

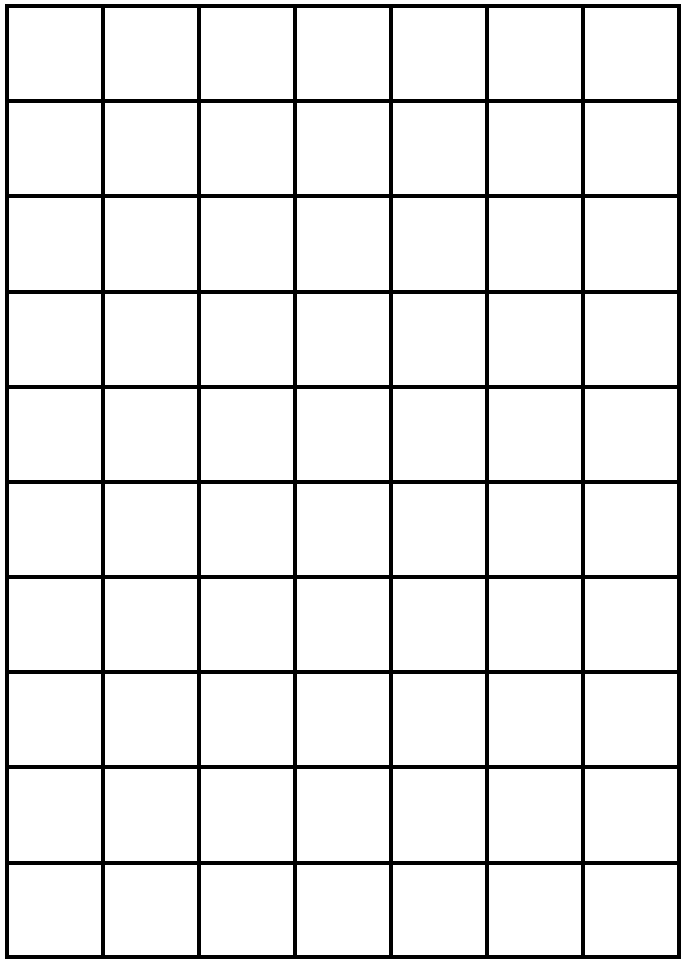
6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6

10 x 7 = 70

Area model

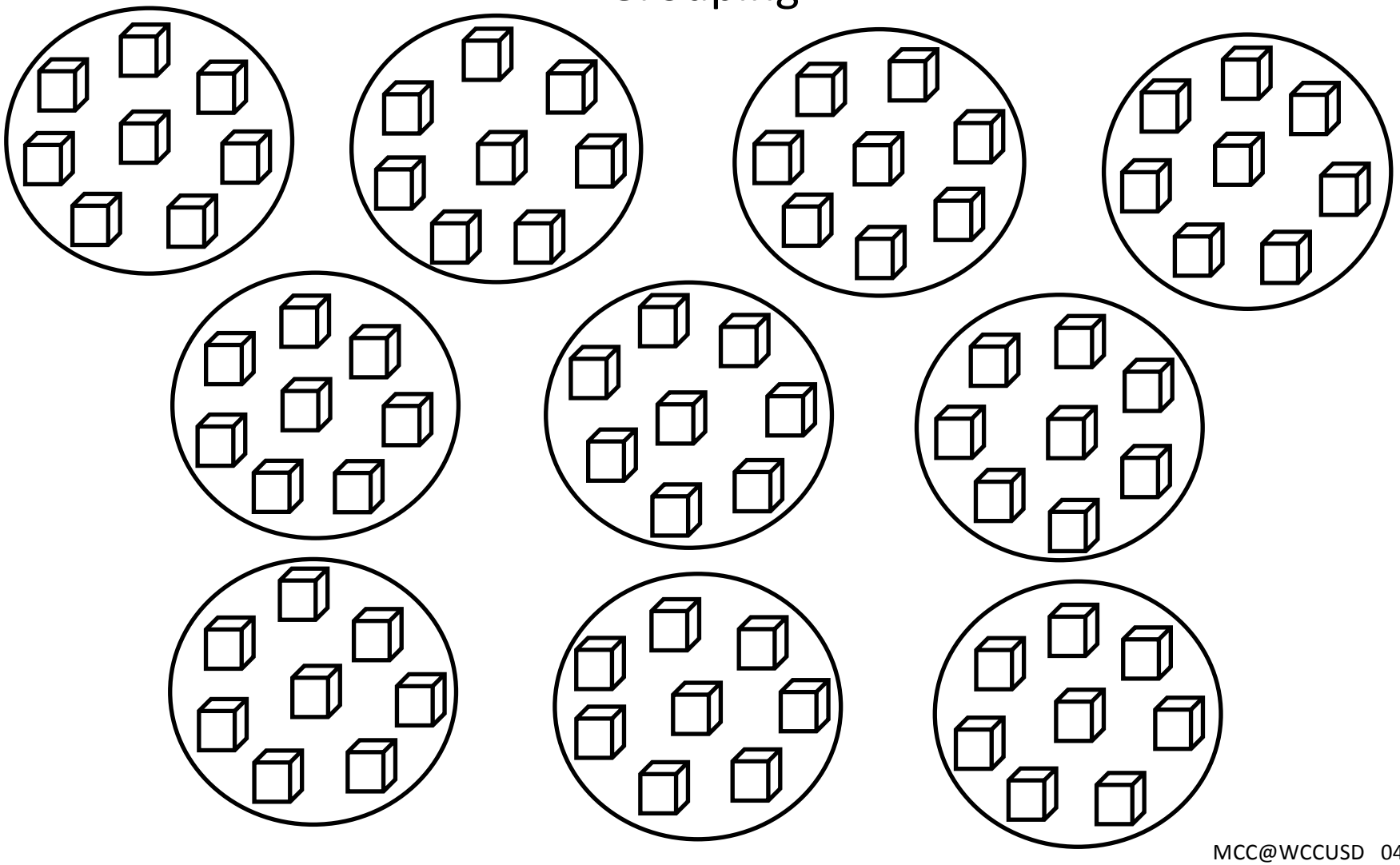
7

10



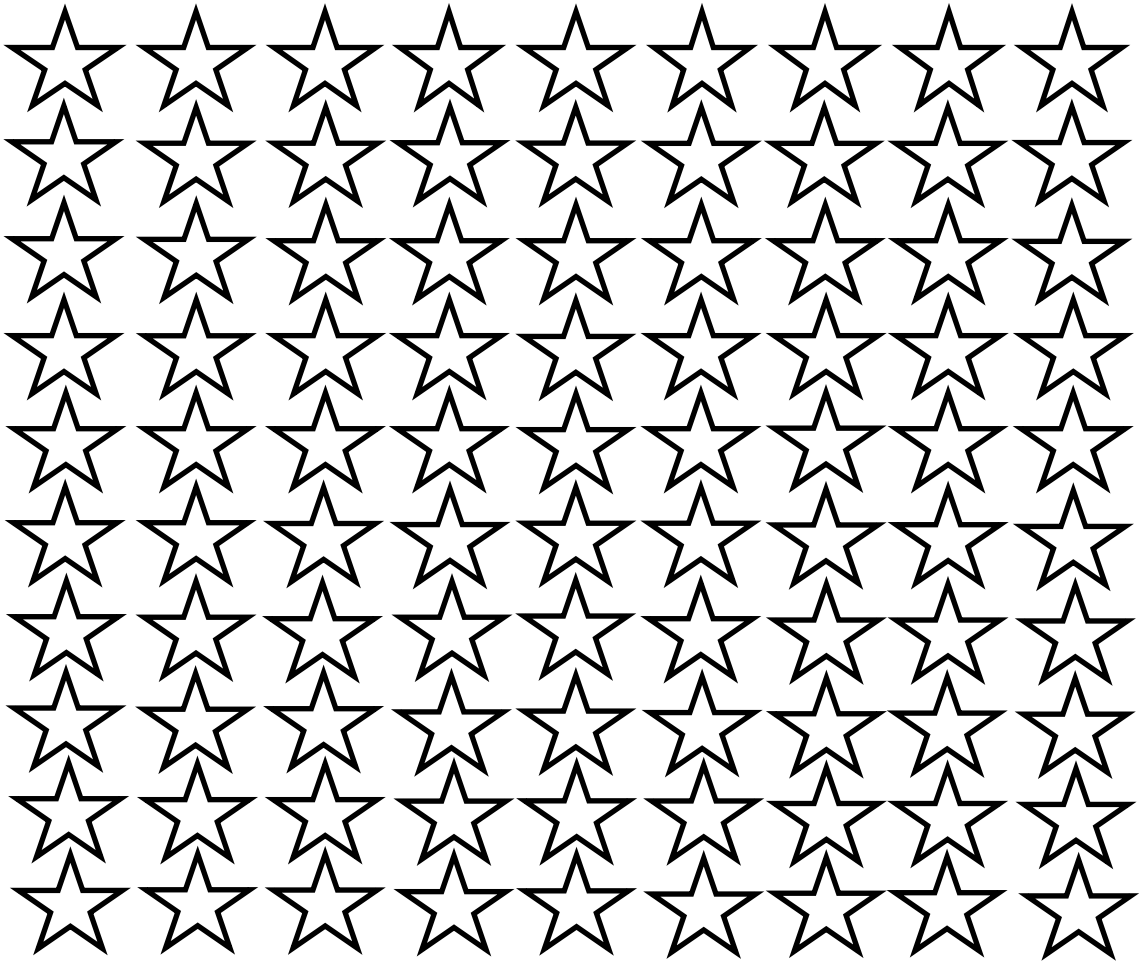
80 = 10 x _

Grouping



___ = 10 x 9

Array

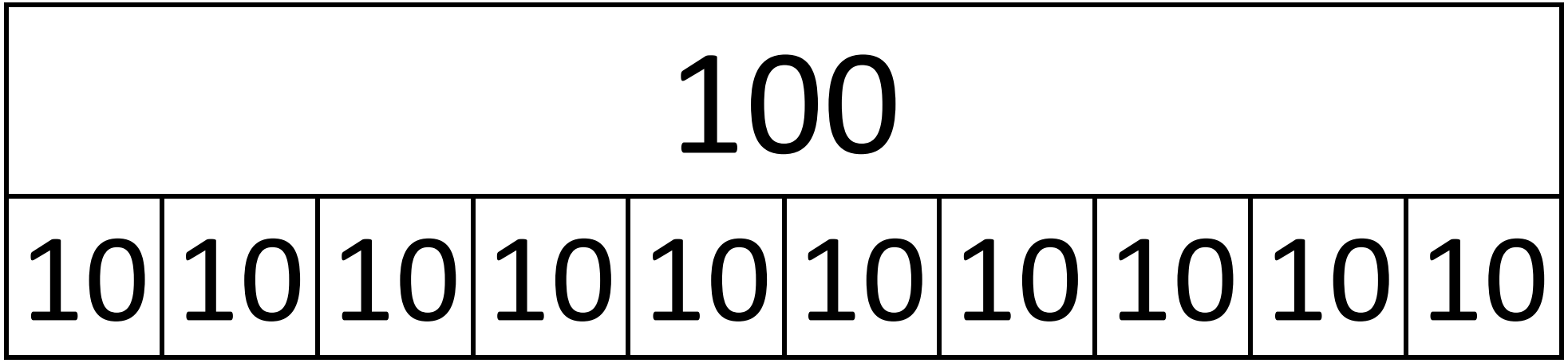


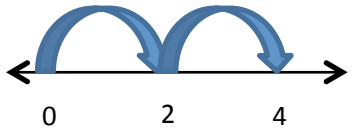
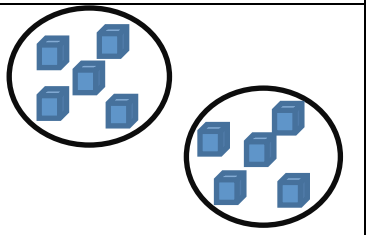
100 = 10 x 10

Decompose

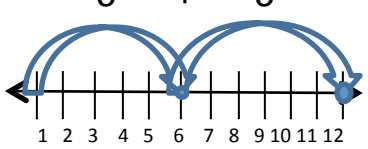
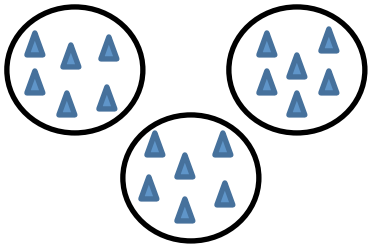
(10 x 5) + (10 x 5)

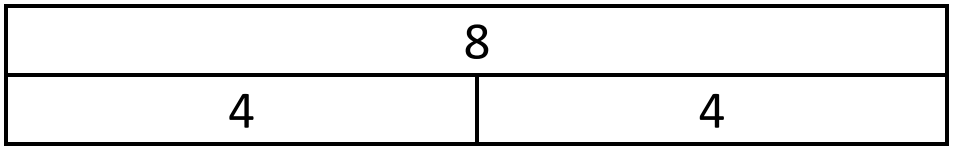
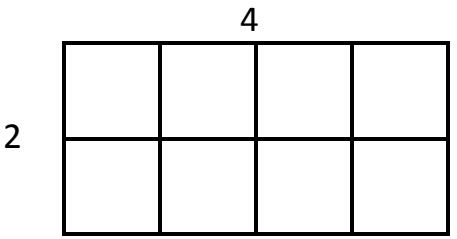
Bar model



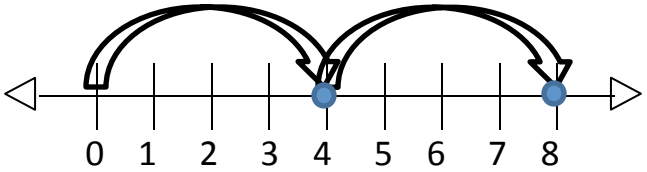
Fact	Array	Area model	Number line	Equal Groups
2 x _ = 6				
				
				
				
				

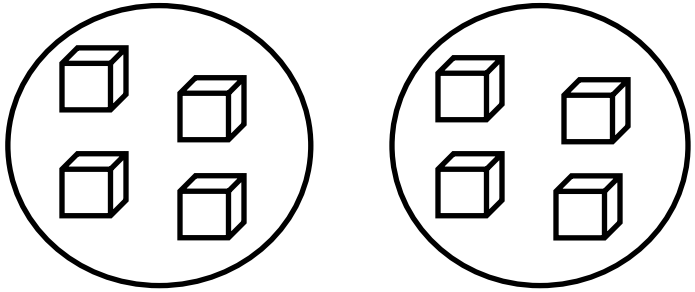
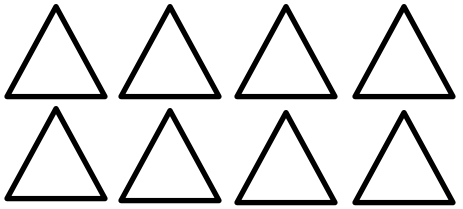
Fact	Array	Area model	Number line	Equal Groups

FACT TWO WAYS	NUMBER LINE	GROUPS	BAR MODEL	AREA MODEL or ARRAY
1) 3 x 2 = 2) 6 = _ x 2				2 3
1) 2)	6 + 6  			
1) 2)				
1) 2)			20 4 4 4 4 4	
1) 2)				

Bar model	Area model
Eight equals two groups of four 8 = 2 x 4  	

Number line



Groups	Array
	

FACT TWO WAYS	NUMBER LINE	GROUPS	BAR MODEL	AREA MODEL or ARRAY
1) 2)				
1) 2)				
1) 2)				
1) 2)				
1) 2)				

Number line	