Creating Reasoning Routines, Building Problem-Solvers

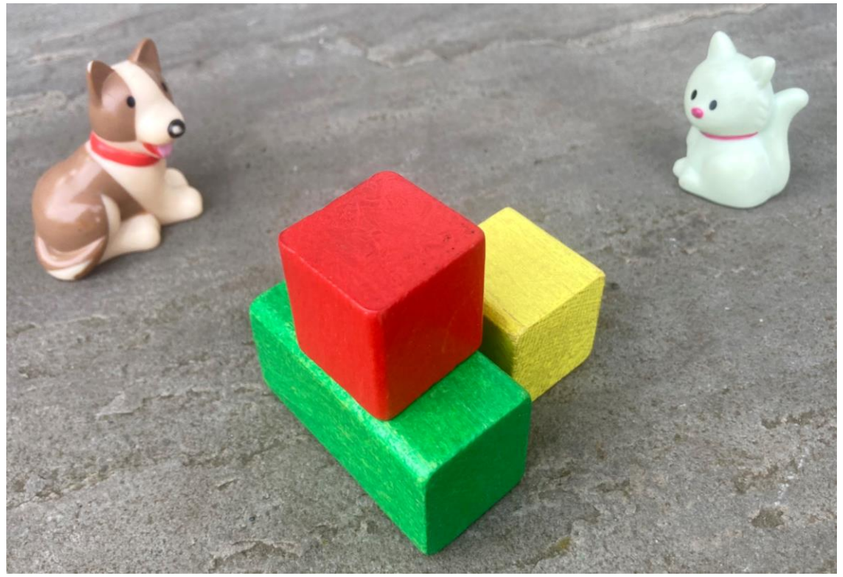
Session 2

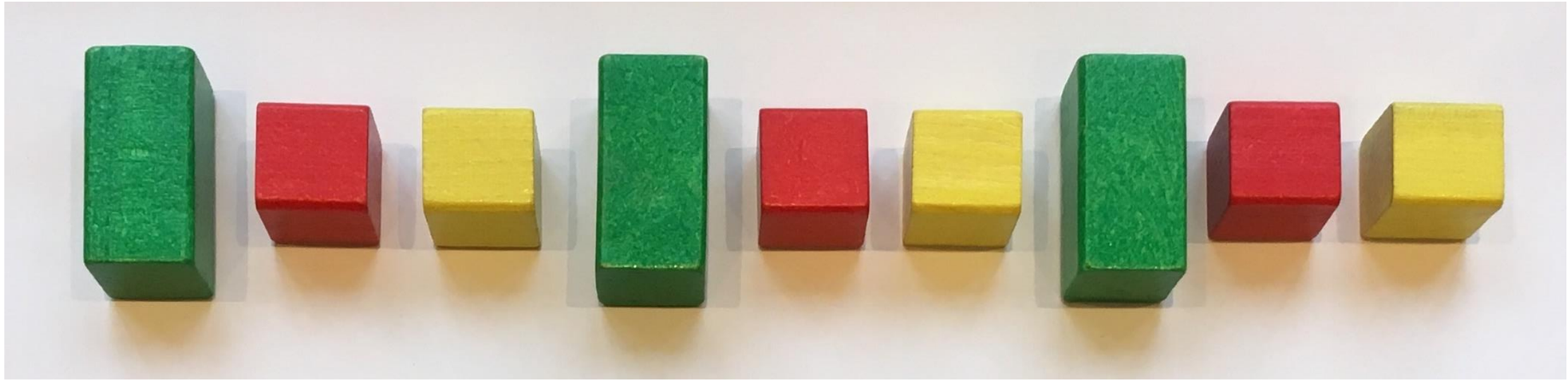
RECAP: Building Problem-Solvers

www.iseemaths.com

Y1 & Y2

See it, Cover it, Build it





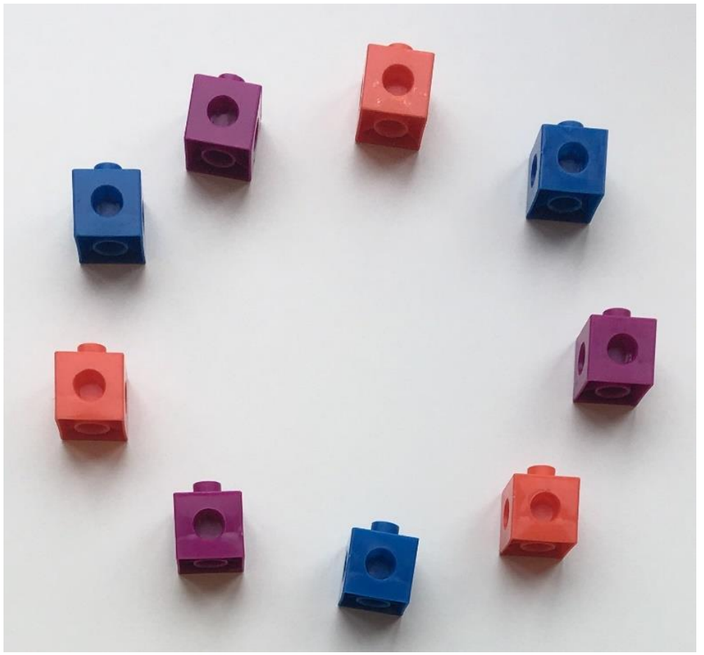
Continue and make patterns

Spot and correct mistakes

Represent with other objects

Identify the ‘unit of repeat’

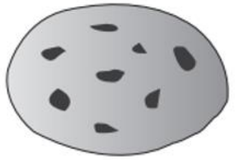
Circular patterns



Rob has ▭ more cherries than John.

Rob has ▭ cherries.

John has ▭ cherries.

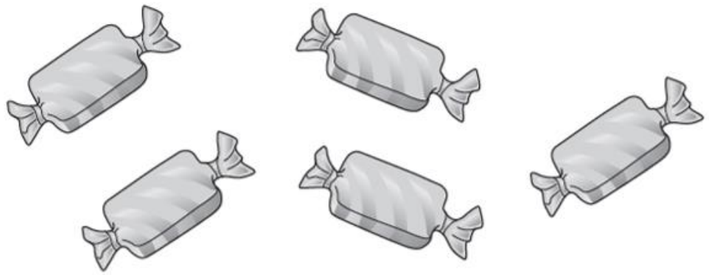


biscuits **20p** each	cakes **25p** each

Sam buys ▭

How much does Sam spend **altogether?**

Bilal spends **10p** on these sweets:



Each sweet costs the same amount.

▭

Sally buys 3 cinema tickets.

Each ticket costs £5.

How much does Sally spend?

£5	£5	£5

£5	£3

Annie has £1 in total in her hands.

What coins could be in Annie's closed hand?

Accessibility, depth

There were 20 people on the bus.

At the bus stop, [redacted]

How many people on the bus now?

There were 20 people on the bus.

At the bus stop, 5 people got off the bus and 5 people got on.

How many people on the bus now?

There were 20 people on the bus.

At the bus stop, 8 people got off the bus and 6 people got on.

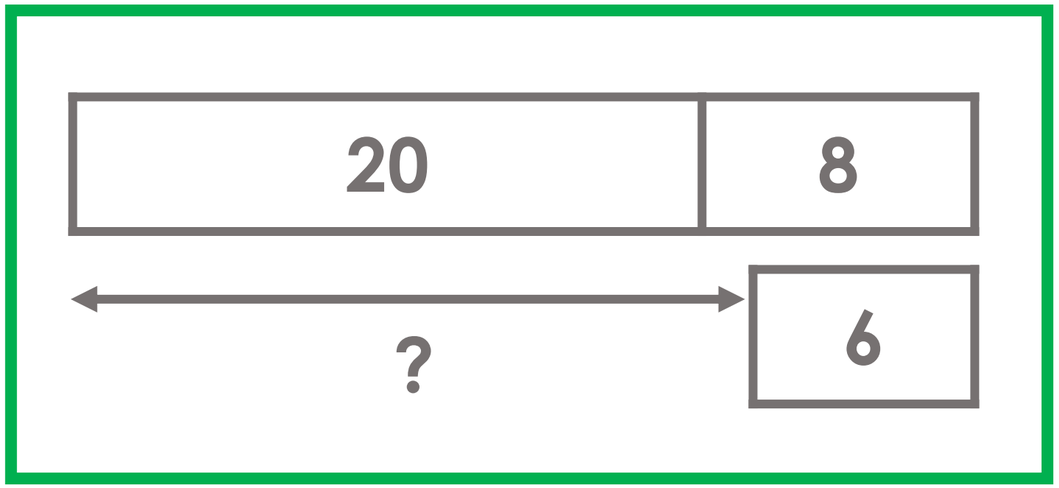
How many people on the bus now?

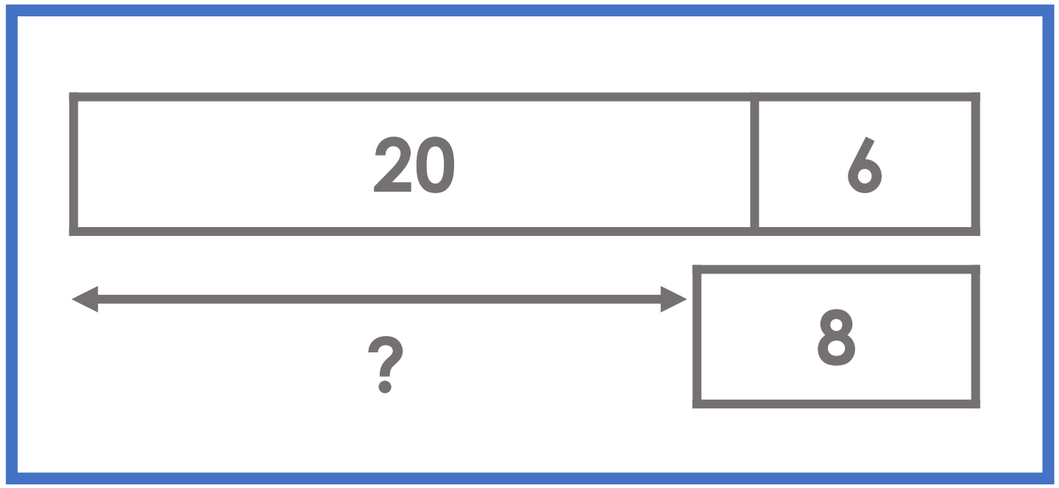
There were 20 people on the bus.

At the bus stop, 8 people got off the bus and 6 people got on.

How many people on the bus now?

Which Picture?





1. Dan had 10 sweets. He gave 2 sweets to Tom and 3 sweets to Raja.
   How many sweets does Dan have left?

2. Holly had 10 pencil crayons.
   She lost 2 pencil crayons. Then, she bought 3 more pencil crayons.
   How many pencil crayons does Holly have now?

3. There were 10 people on the bus.
   At the next stop, 2 people got on the bus and 3 people got off the bus.
   How many people are on the bus now?

Kay is 4 years old.

Ann is twice as old as Kay.

Ann's gran is 10 times older than Ann.

How old in Ann's gran?

Successes…

Challenges…

Next steps…

Question:

View Deconstructing Word Questions Samples

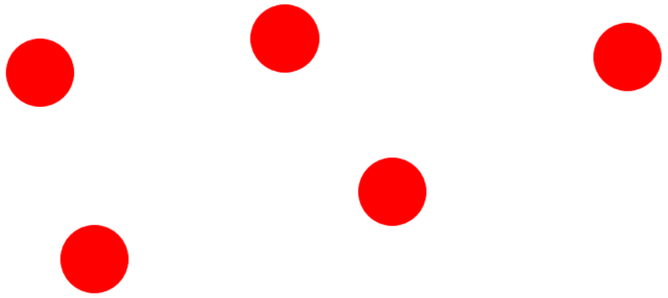
Creating Reasoning Routines, Building Problem-Solvers

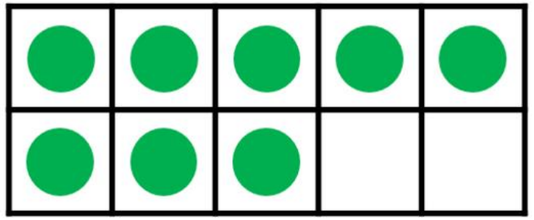
Session 3

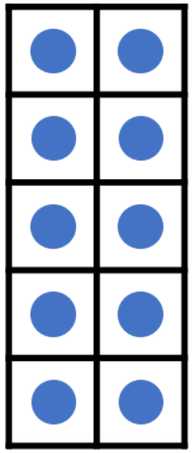
Wide Opportunities for Reasoning and Problem-Solving

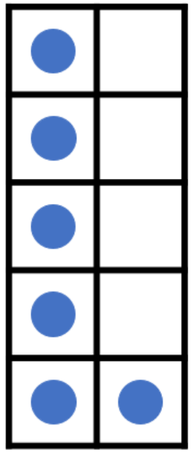
www.iseemaths.com

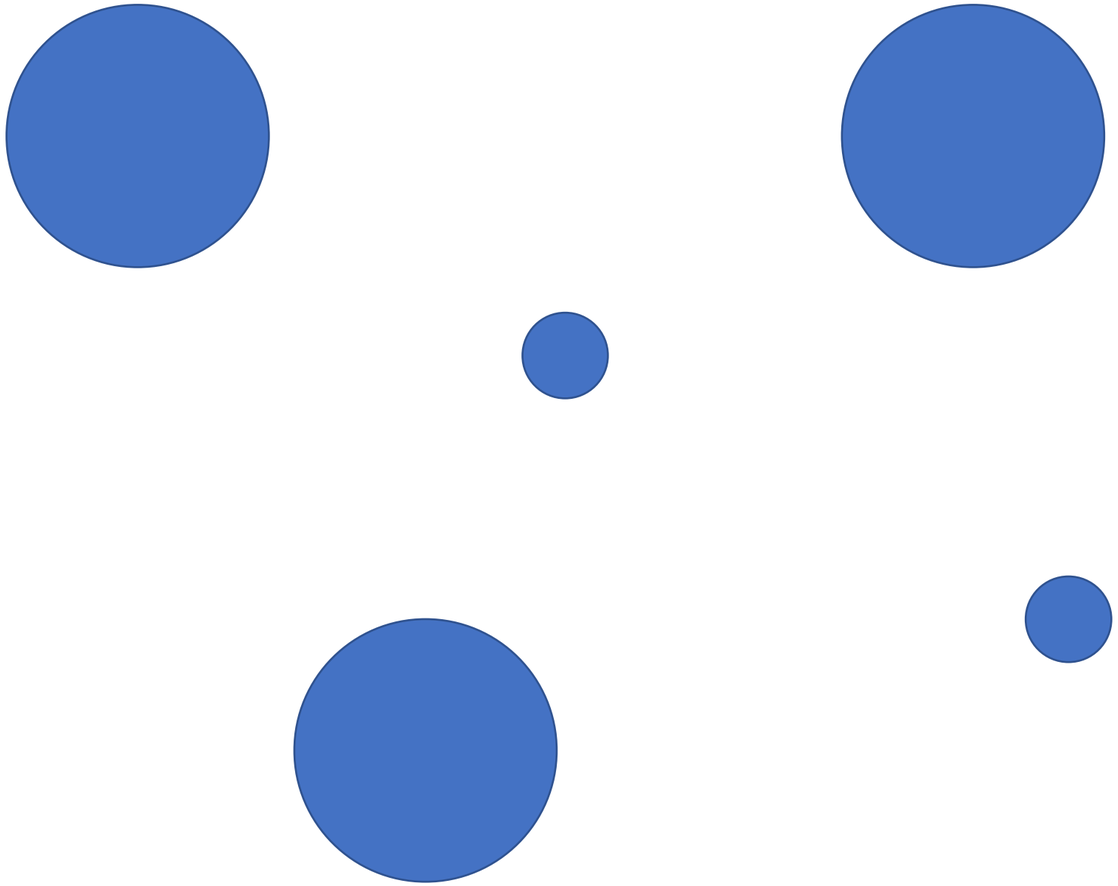
Y1 & Y2

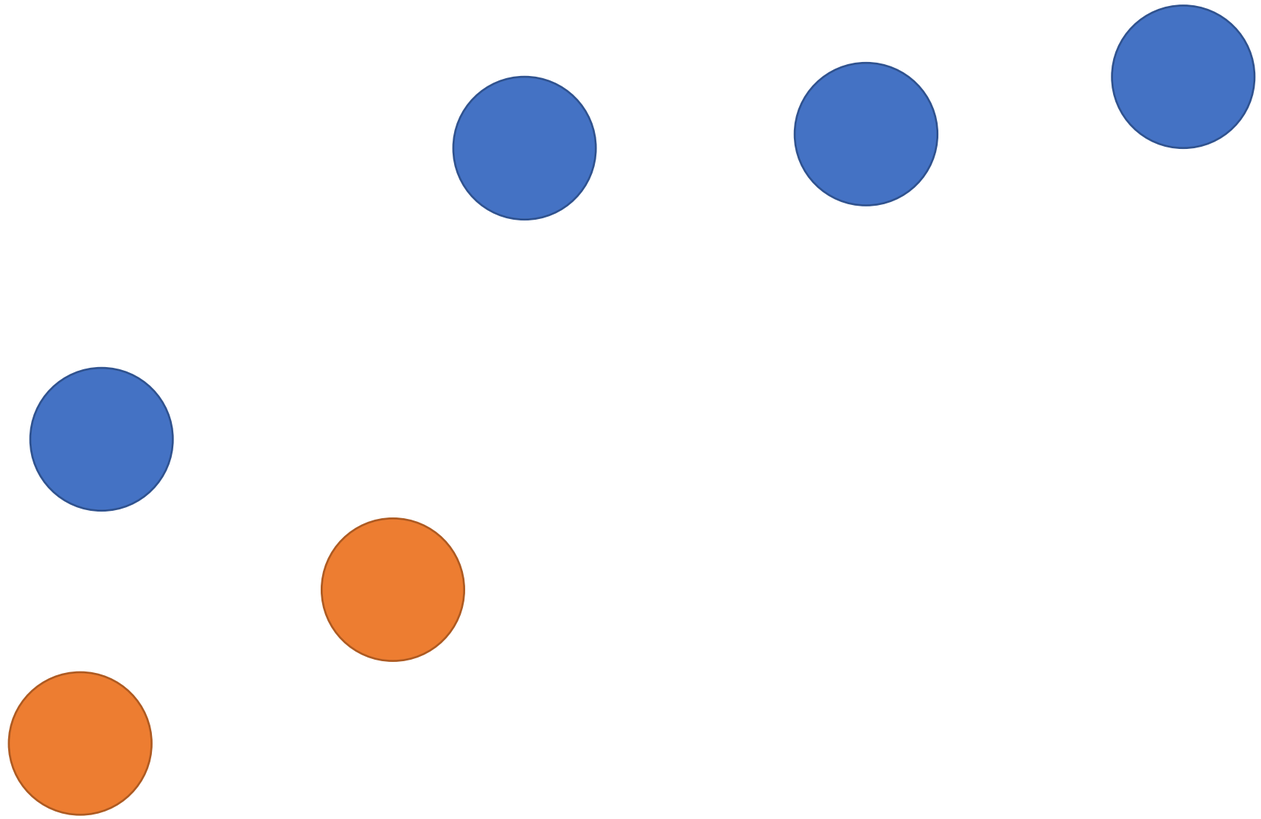


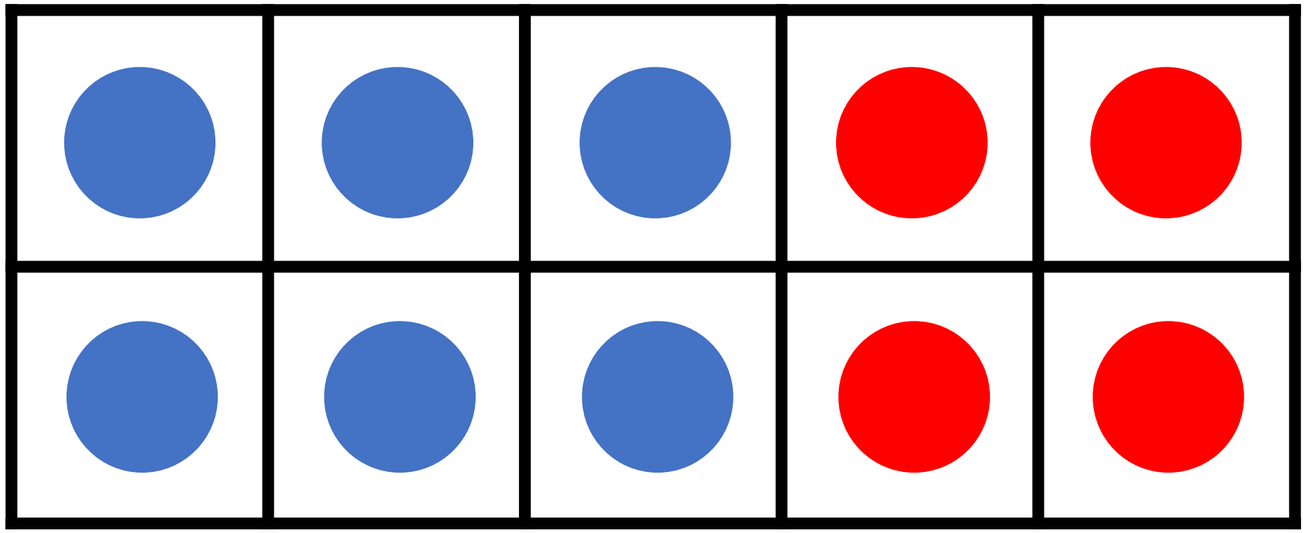


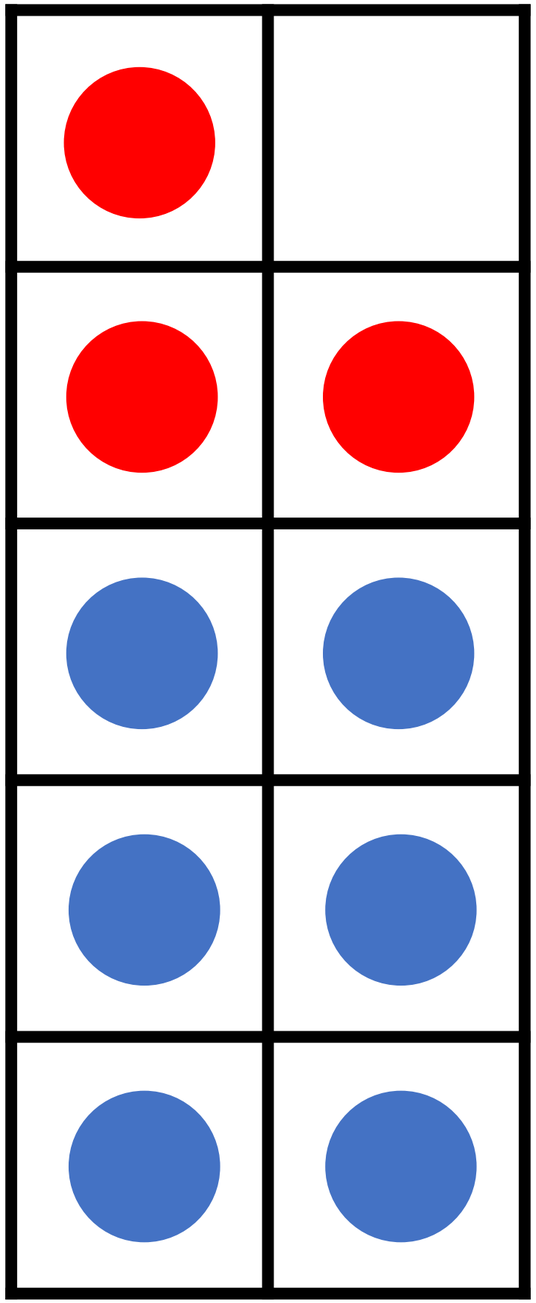


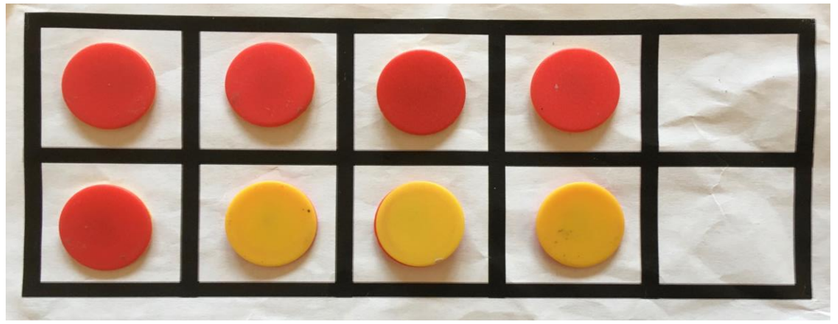




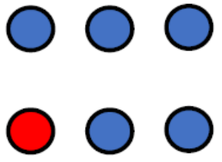




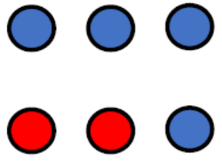




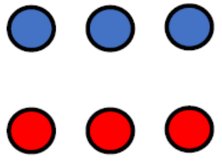
The **whole** is…
The **parts** are…



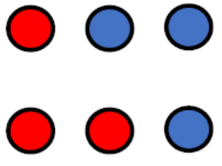
The **whole** is…
The **parts** are…



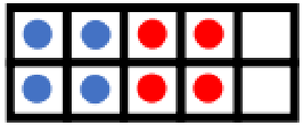
The **whole** is…
The **parts** are…



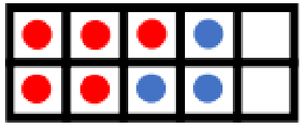
The **whole** is…
The **parts** are…



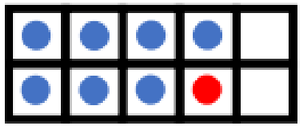
The **whole** is…
The **parts** are…



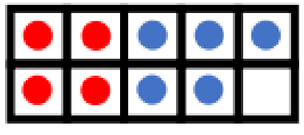
The **whole** is…
The **parts** are…

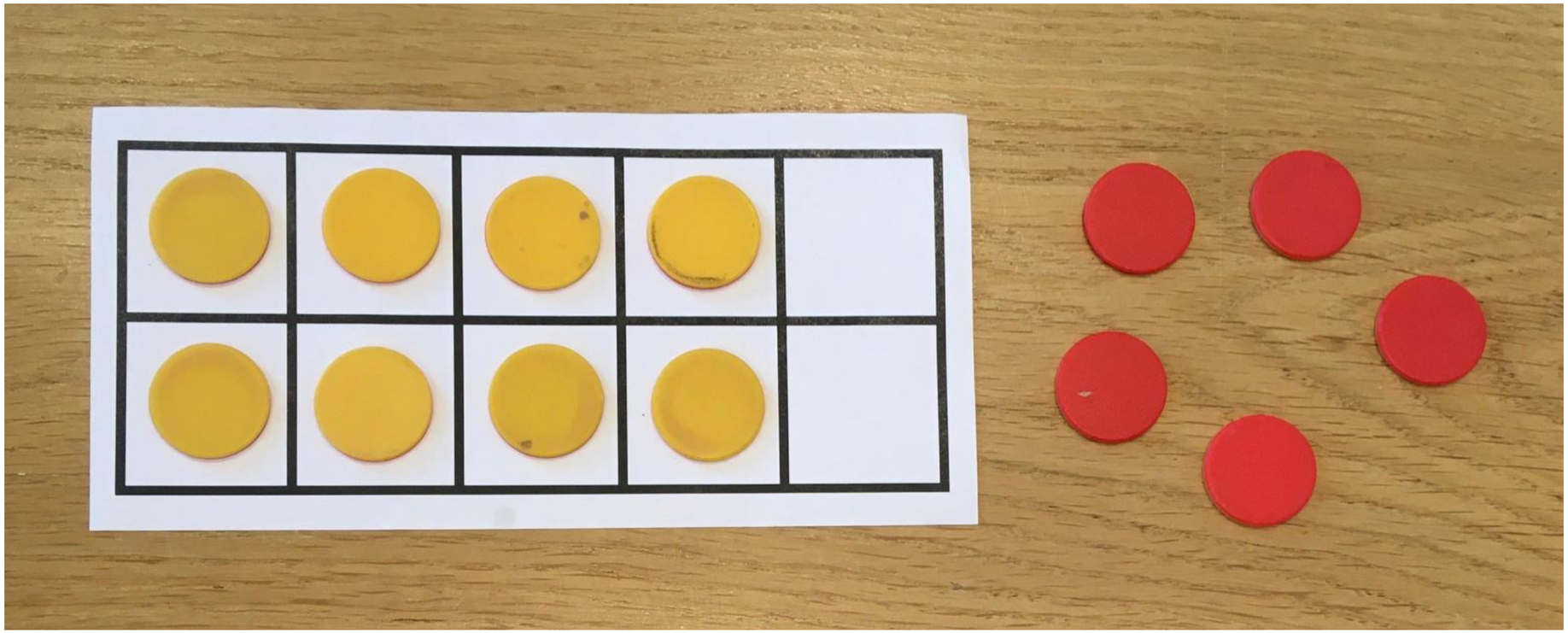


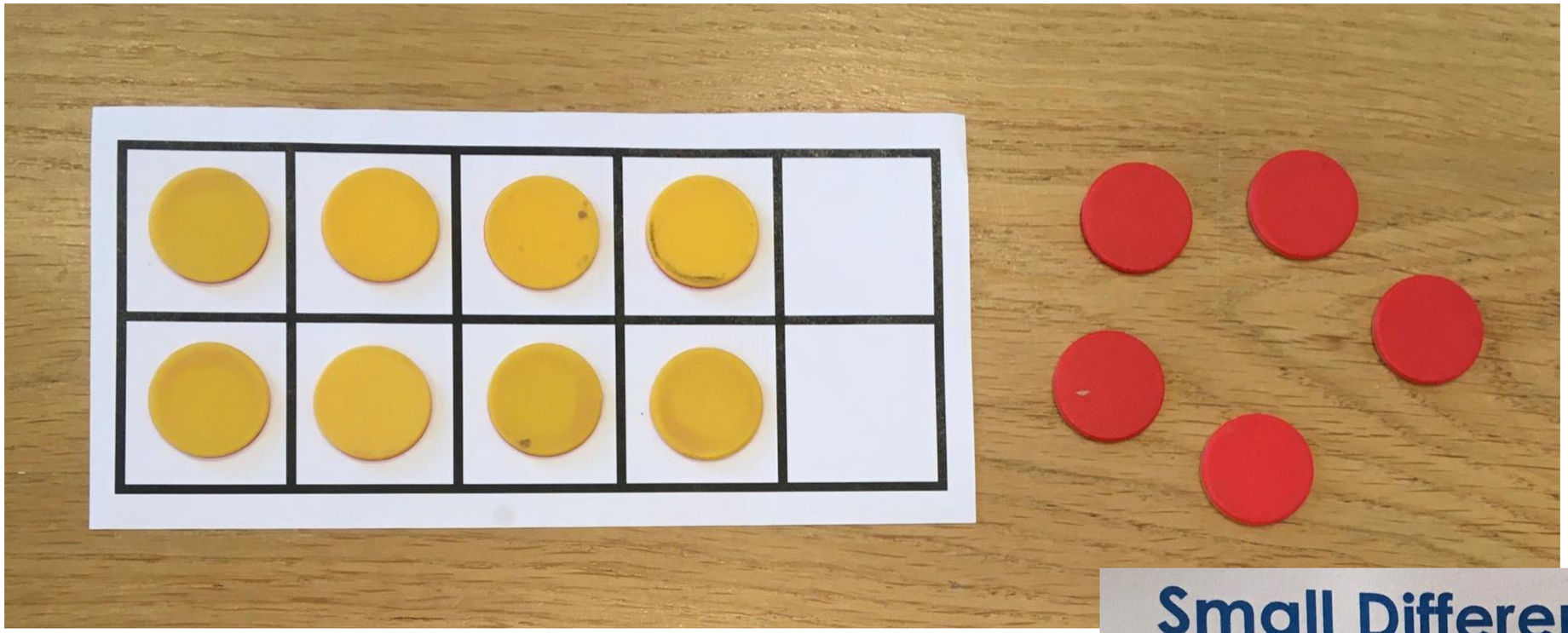
The **whole** is…
The **parts** are…



The **whole** is…
The **parts** are…







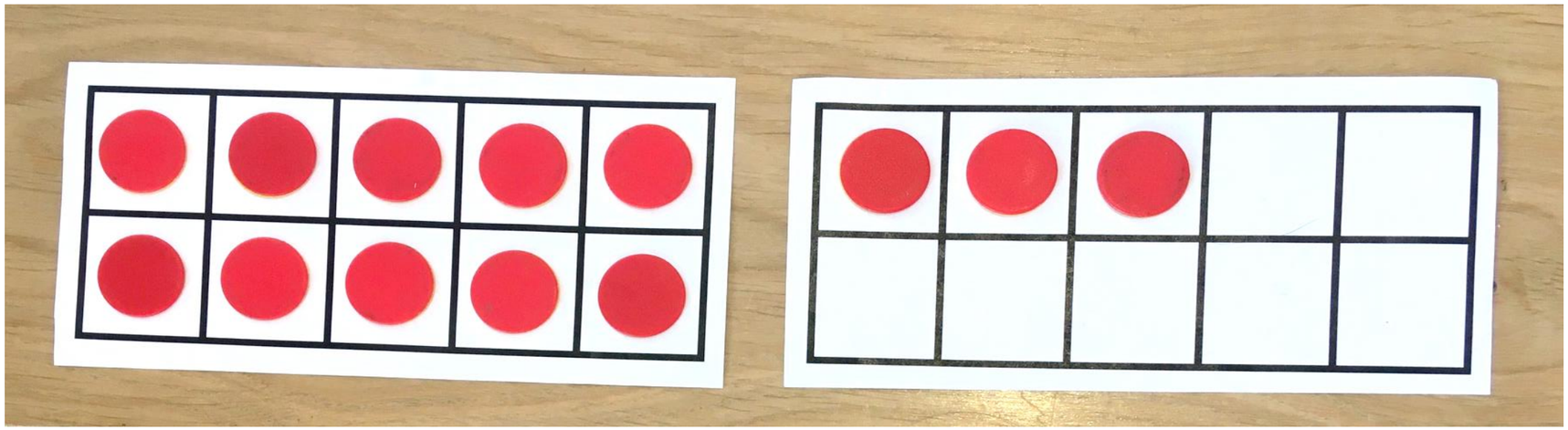
Small Difference Questions

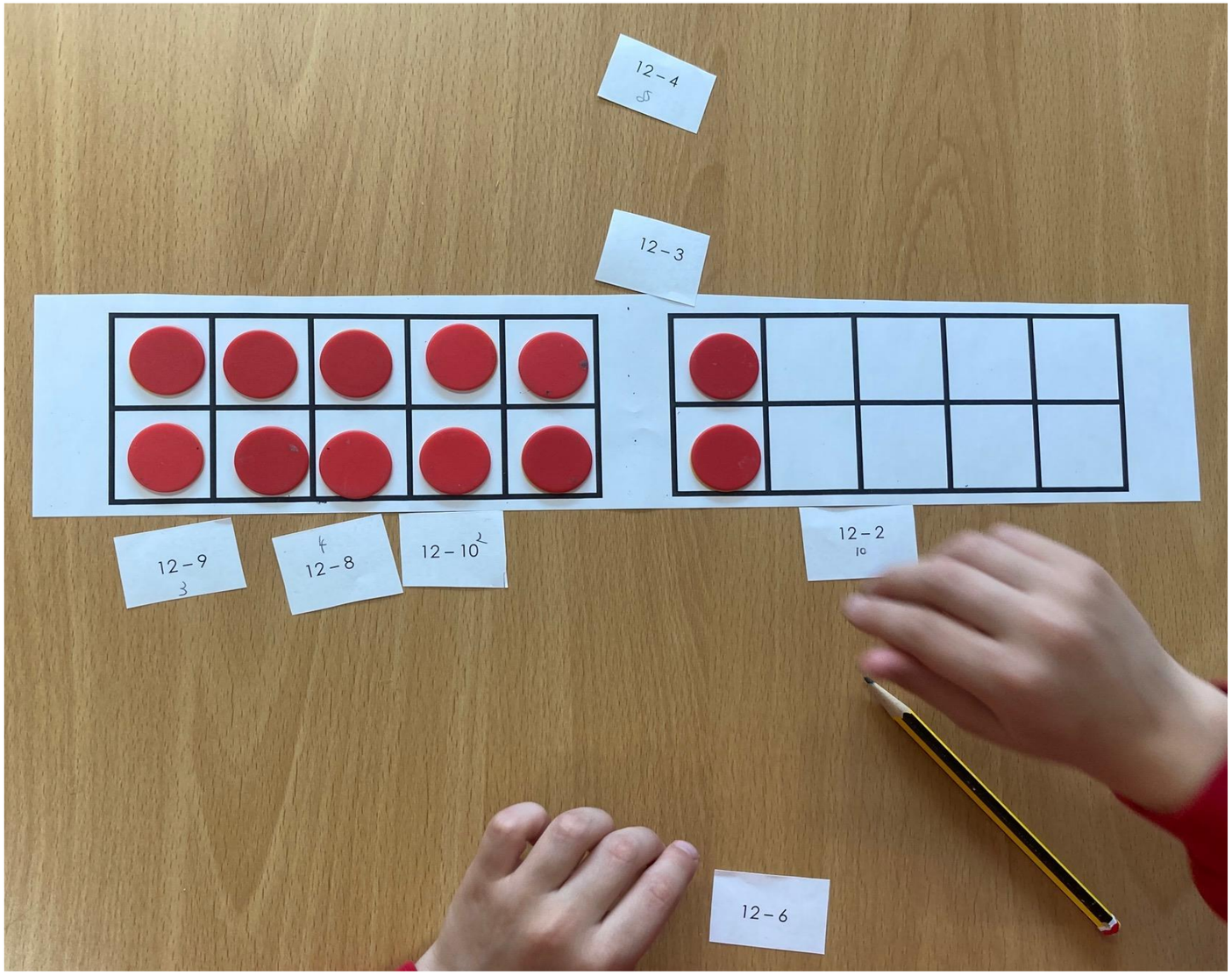
6 + 4 = 10	4 + 4 = 8
6 + 6 = 12	8 + 8 = 16
7 + 5 = 12	8 + 7 = 15
17 + 5 = 22	9 + 6 = 15
5 + 17 = 22	9 + 16 = 25

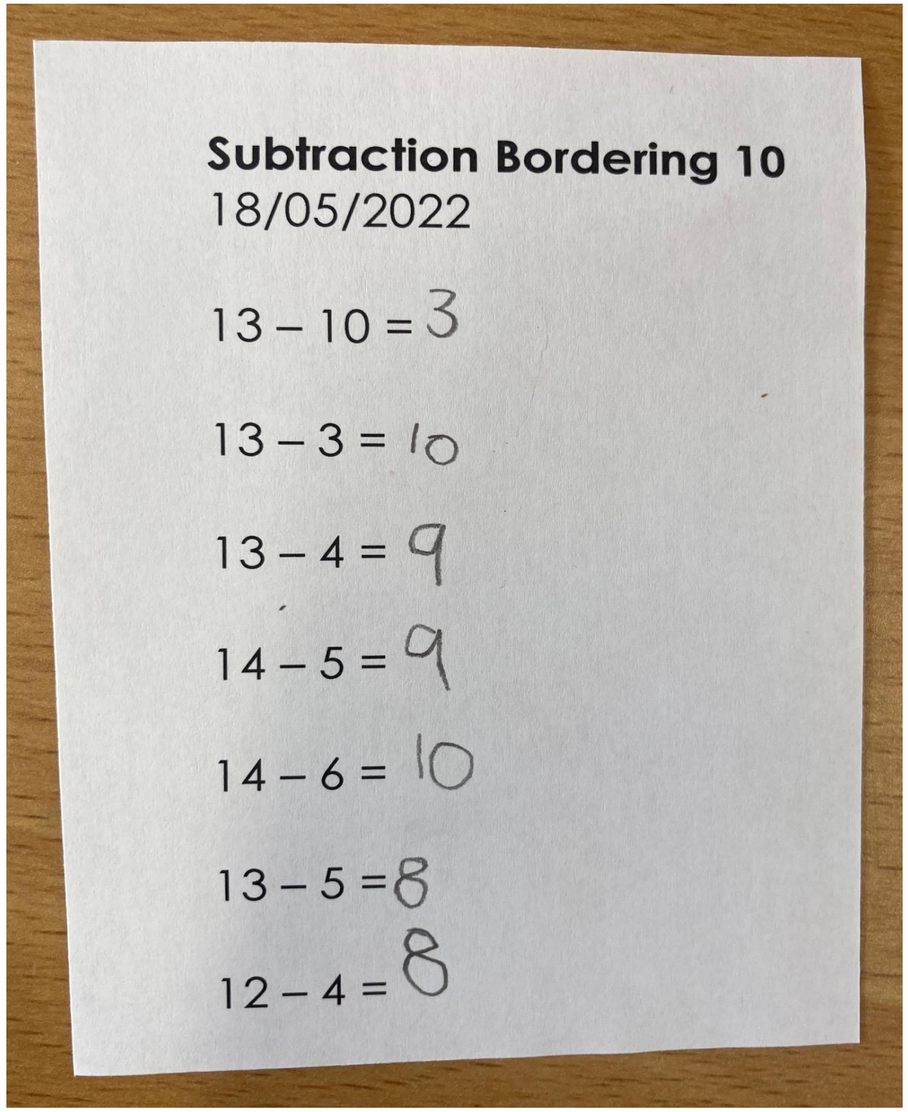
13 – 2

13 – 9

13 – 5







Subtraction Bordering 10

18/05/2022

13 – 10 = 3

13 – 3 = 10

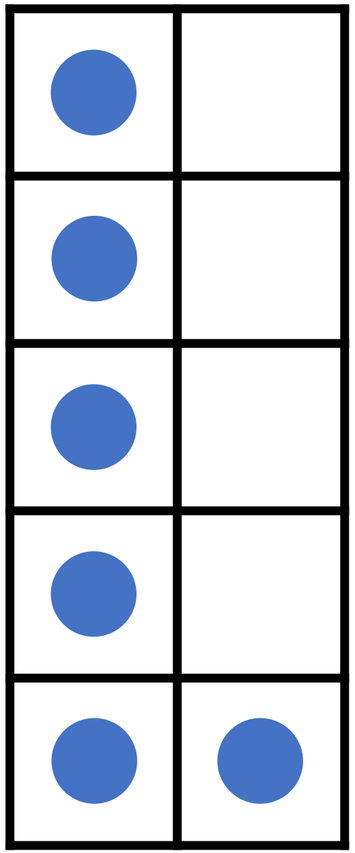
13 – 4 = 9

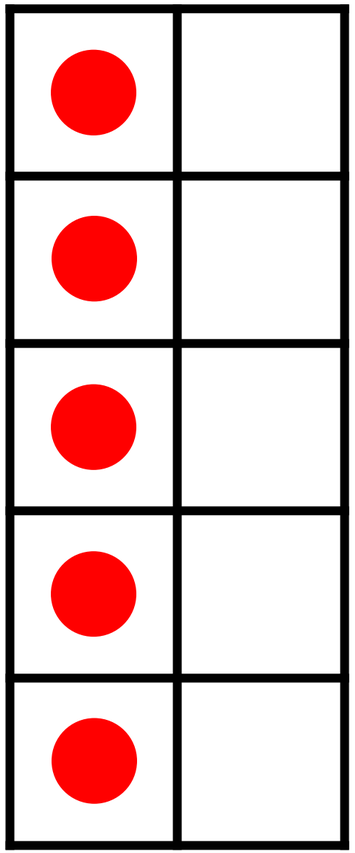
14 – 5 = 9

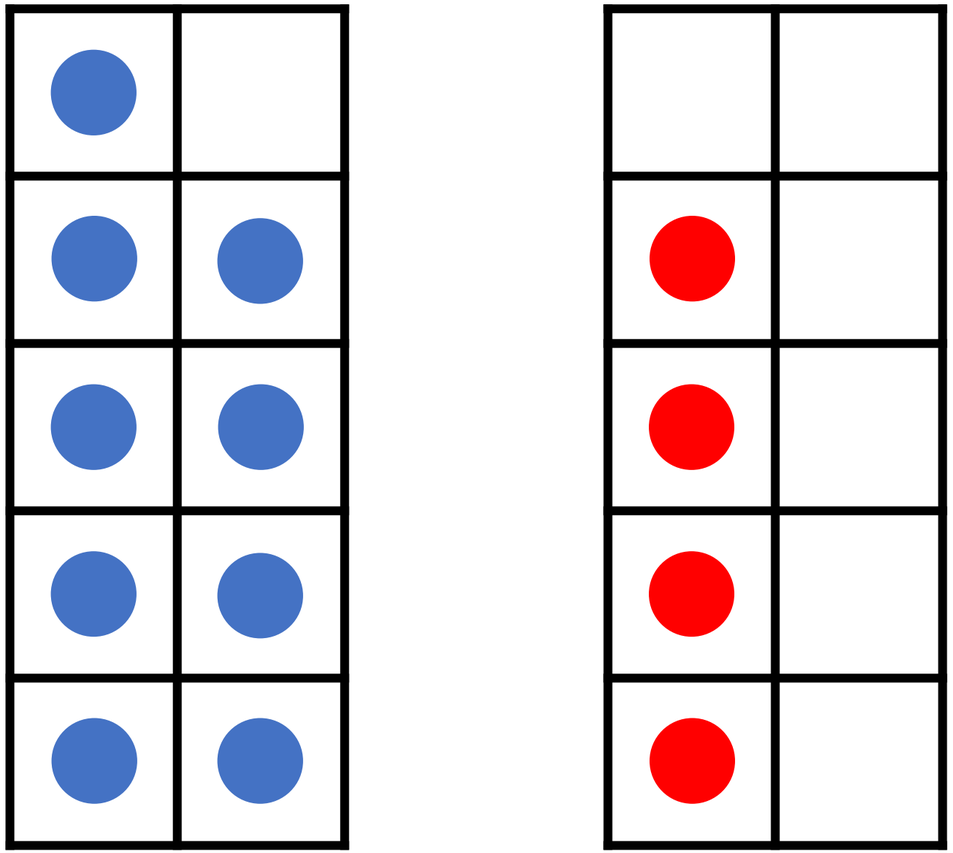
14 – 6 = 10

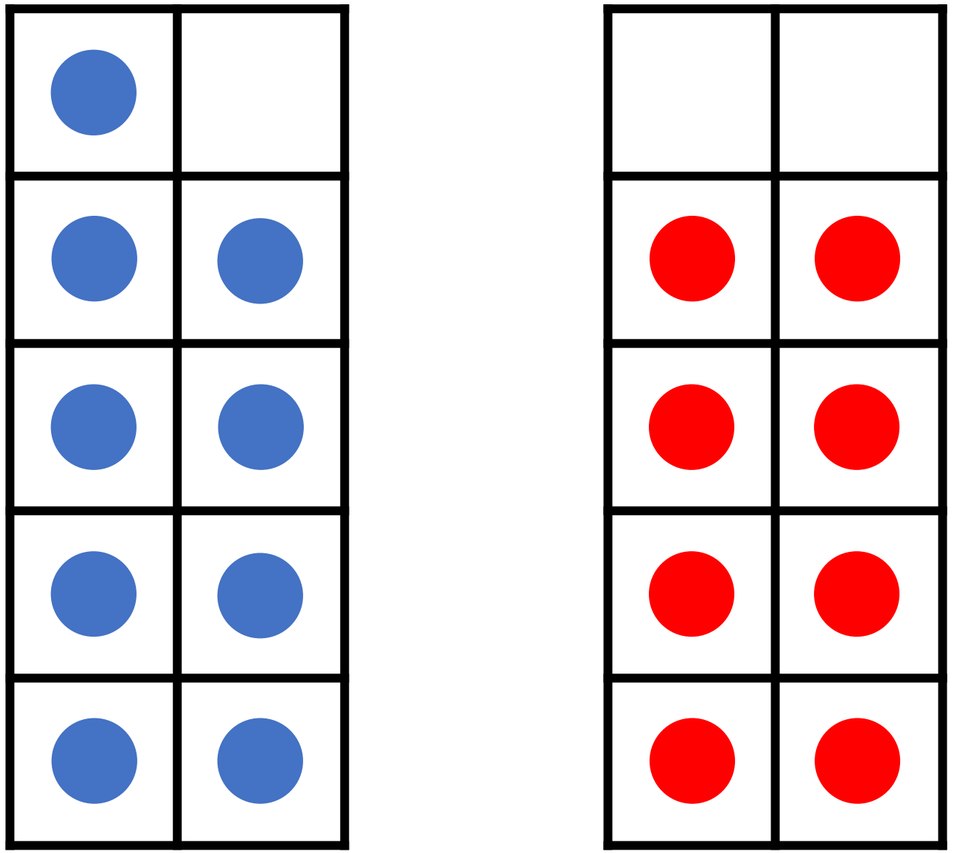
13 – 5 = 8

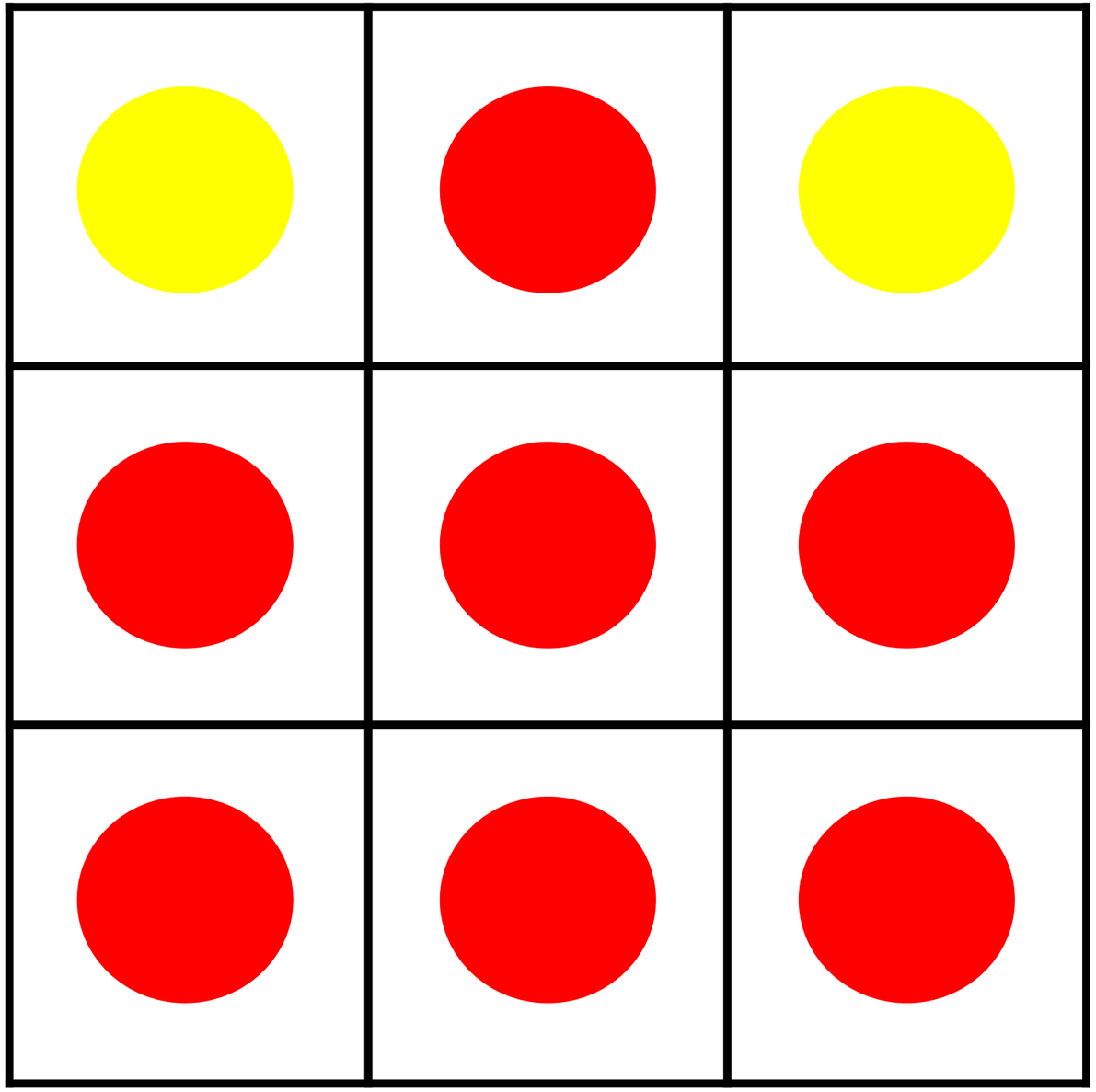
12 – 4 = 8

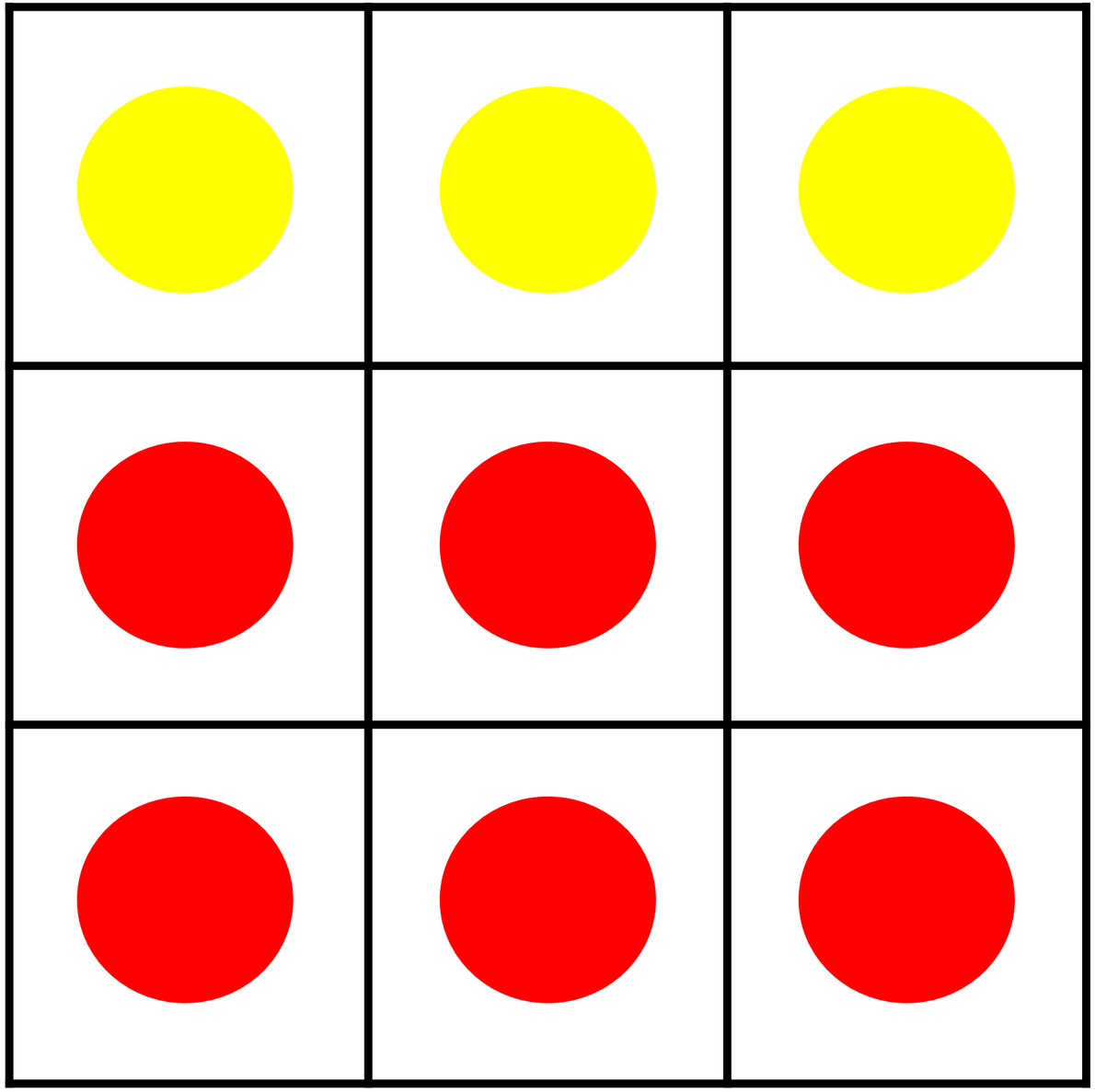


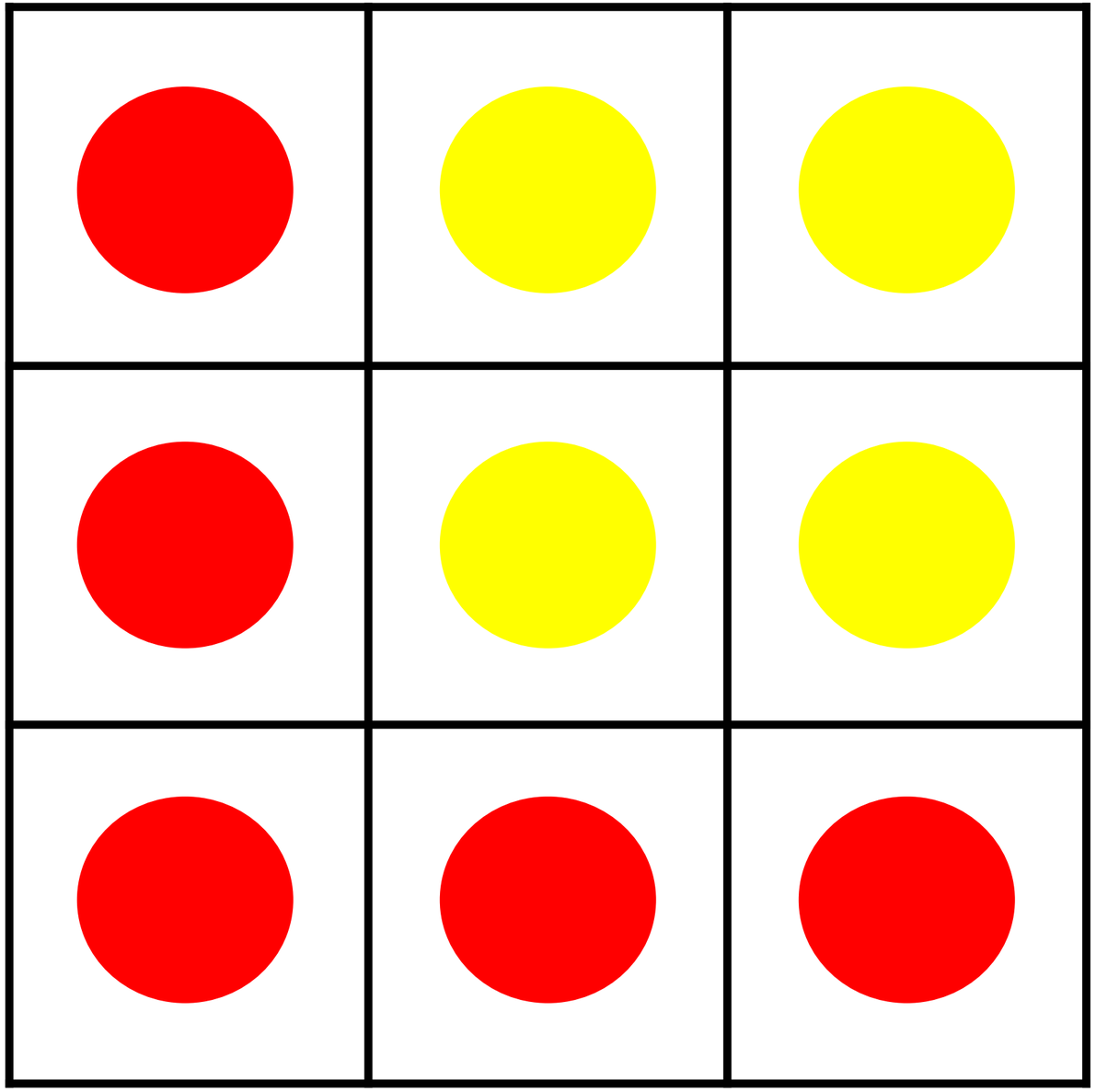






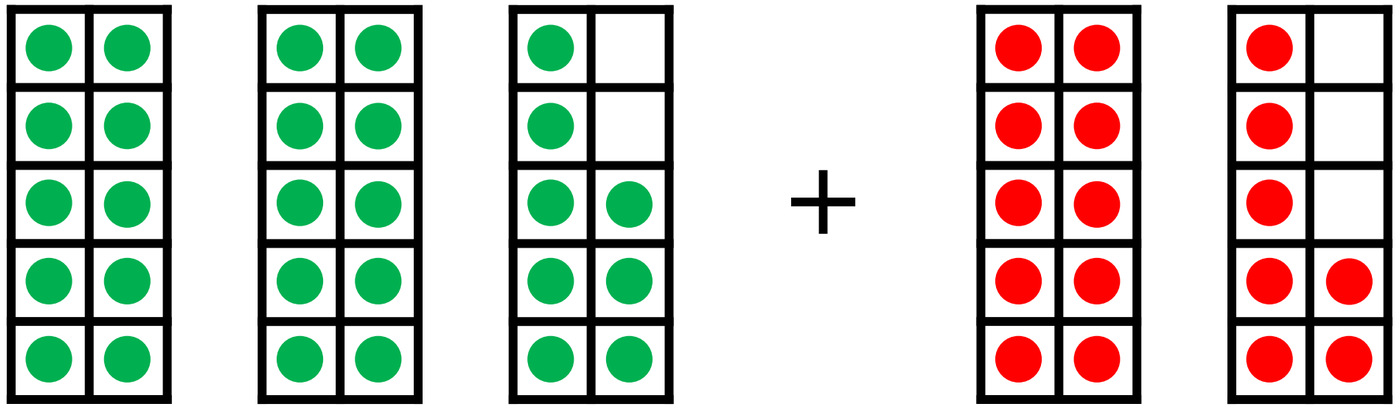






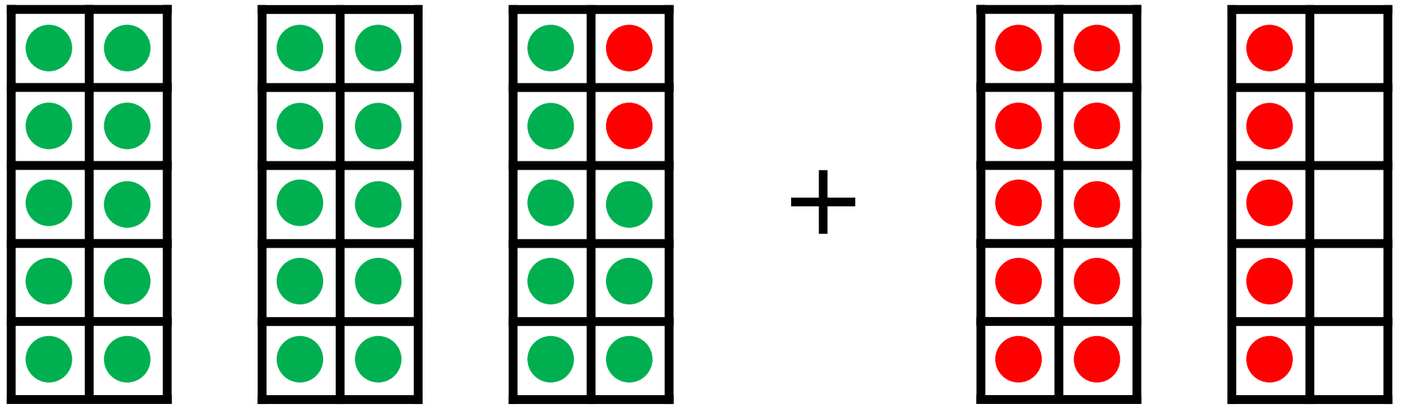
Lampogo

28 + 17



28 + 17

30 + 15



80mm = ____cm

Explain

Mrs Brown is counting how many days it rains this month.

Here is her tally chart so far:

Why is Mrs Brown using tally marks instead of numbers?

Mrs Brown is counting how many children on school dinners and how many on packed lunches.

Here is what she writes:

22 school dinners 8 packed lunches

Why is Mrs Brown using numbers instead of tally marks?

Asking Questions

Task A

For each question, **would you show the answer as a graph?**

✓ **or** ✗

1. How many adults are there in the classroom?
2. How old are the children in the class?
3. What are the shoe sizes of the children in the class?
4. What are the names of the children in the class?
5. What is the favourite colour for each child in the class?
6. How many children are there in the class?

Extend: *Think of two questions about school.*
Would you show the answer as a graph?

Fill the gaps

Use each word: bigger, smaller, heavier, lighter

A **balloon** is _____ than a **tennis ball.**

A **balloon** is _____ than a **tennis ball.**

A **tennis ball** is _____ than a **balloon.**

A **tennis ball** is _____ than a **balloon.**

Different ways

A fish tank – what can be measured?

The fish tank's _____ using a _____.

The fish tank's _____ using a _____.

The fish tank's _____ using a _____.

The fish tank's _____ using a _____.

You can measure:

weight length

capacity temperature

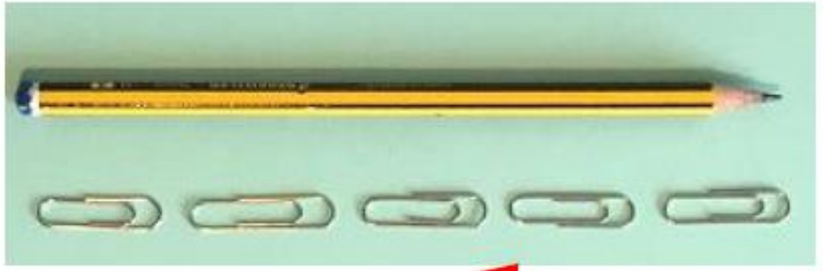
Tools to measure:

ruler thermometer

scale measuring jug

Which answer?

The pencil is the same length as how many paperclips?



5 paperclips

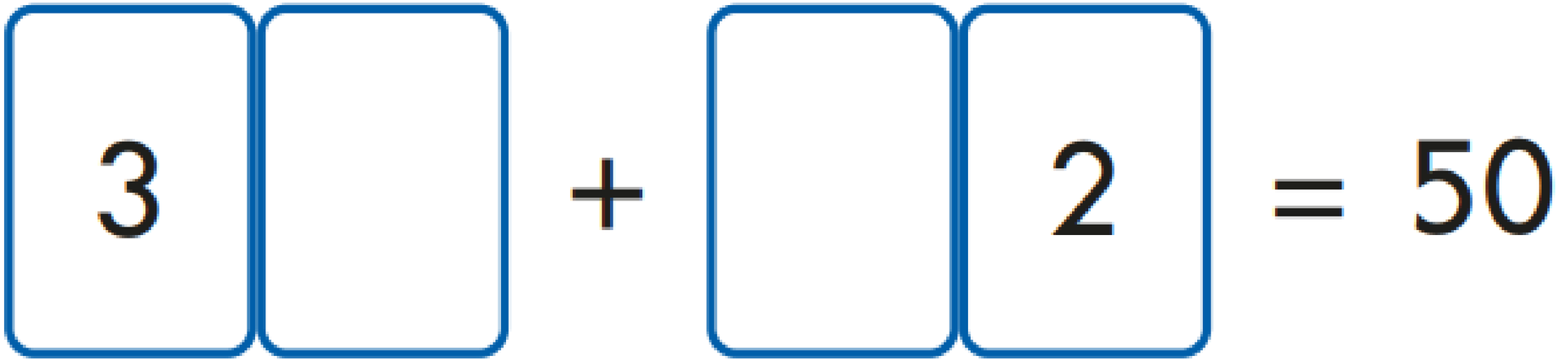
6 paperclips

5 paperclips

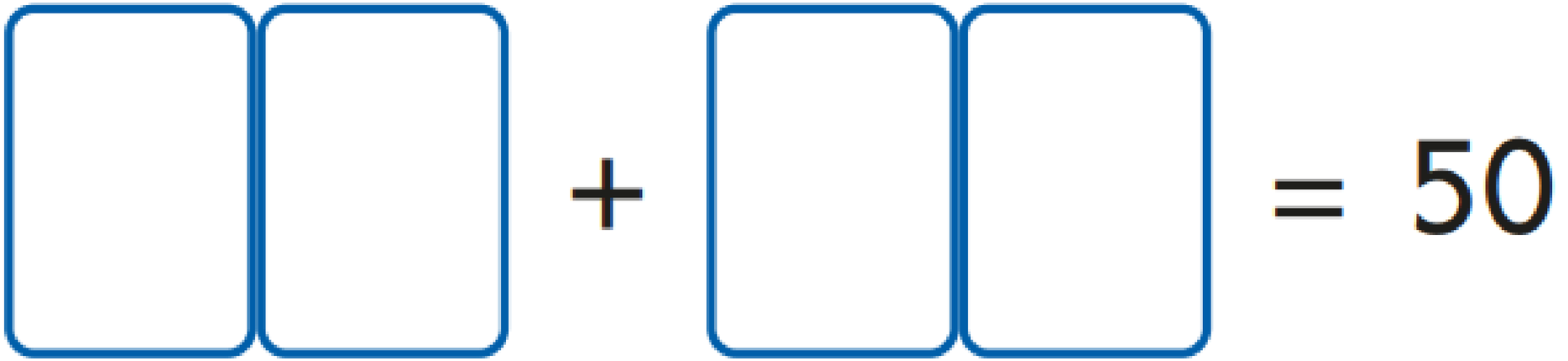
Explain the mistakes

1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 48 49 50
51 52 53 54 55 56 57 58 59 60
61 62 63 64 65 66 67 68 69 70
71 72 73 74 75 76 77 78 79 80
81 82 83 84 85 86 87 88 89 90
91 92 93 94 95 96 97 98 99 100
Hundred Square
autopress
ypo
ypo

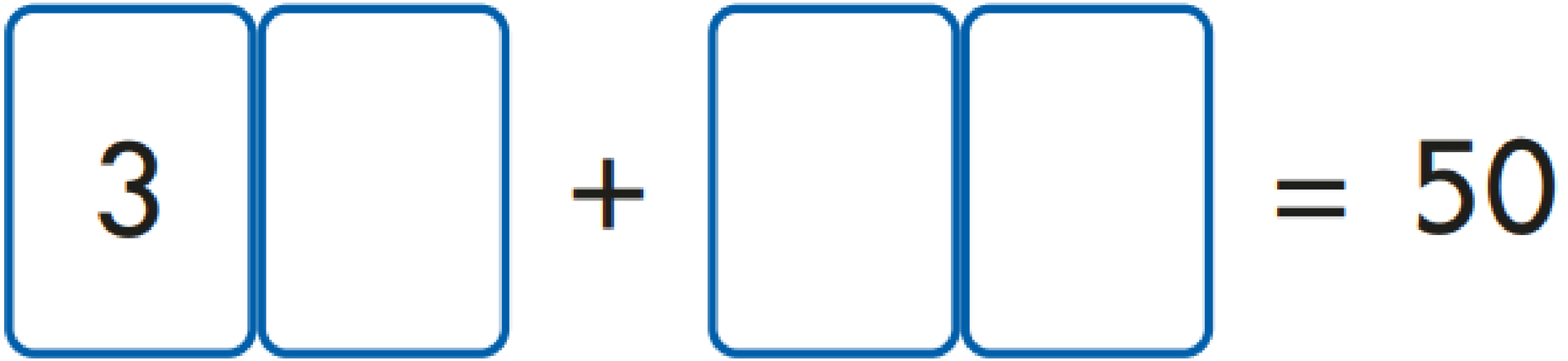
Write a digit in each box to complete this number sentence.



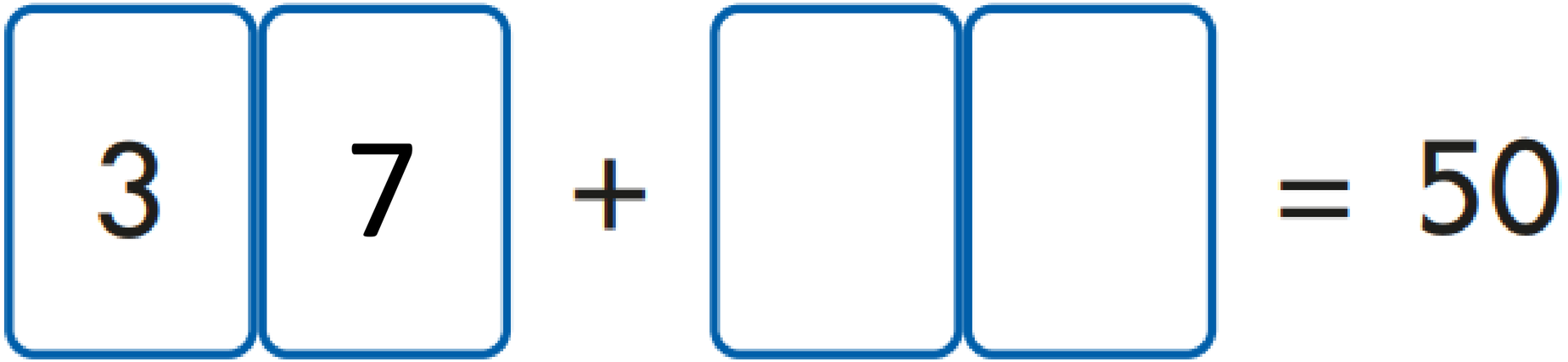
Write a digit in each box to complete this number sentence.



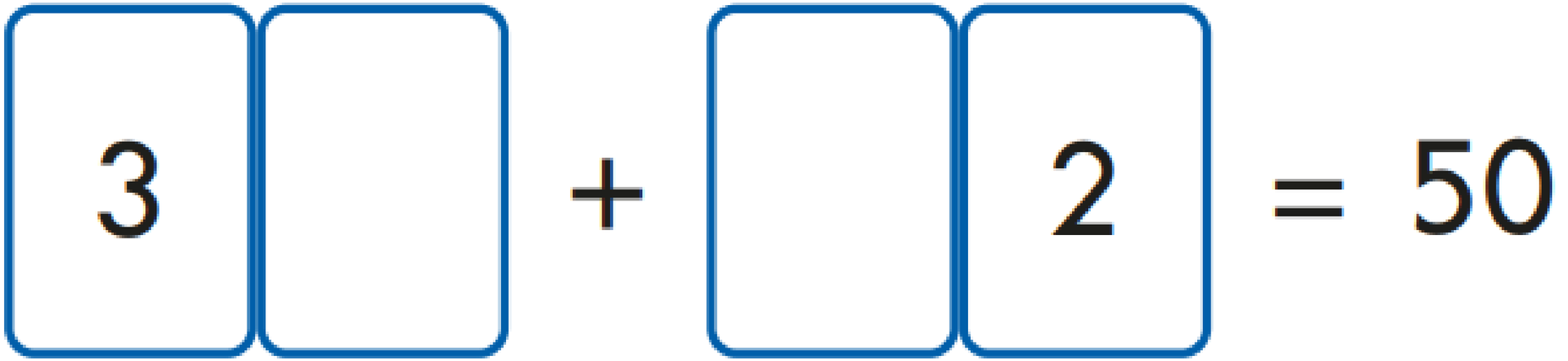
Write a digit in each box to complete this number sentence.



Write a digit in each box to complete this number sentence.

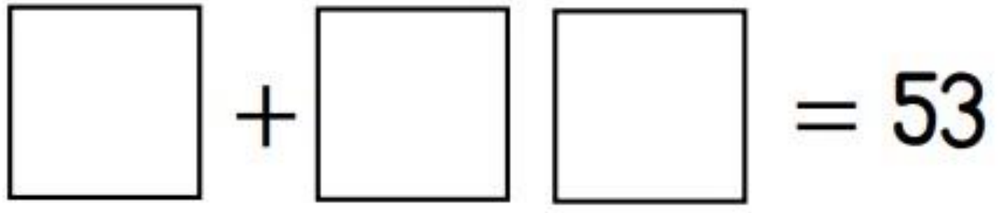


Write a digit in each box to complete this number sentence.



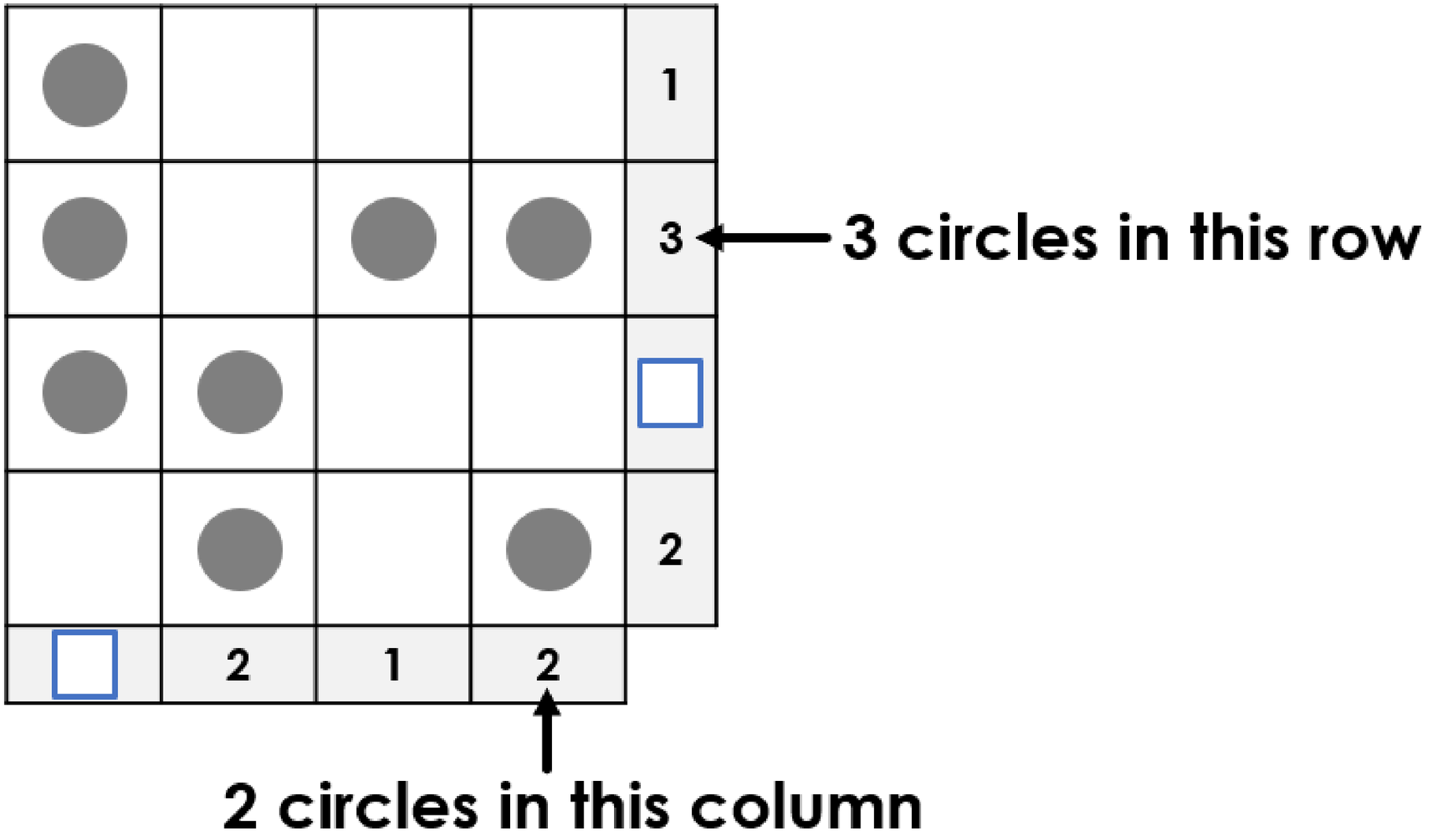
Here are three digit cards.

Use the cards to find two different ways to complete the number sentence.



Counters on a Grid

Part 1

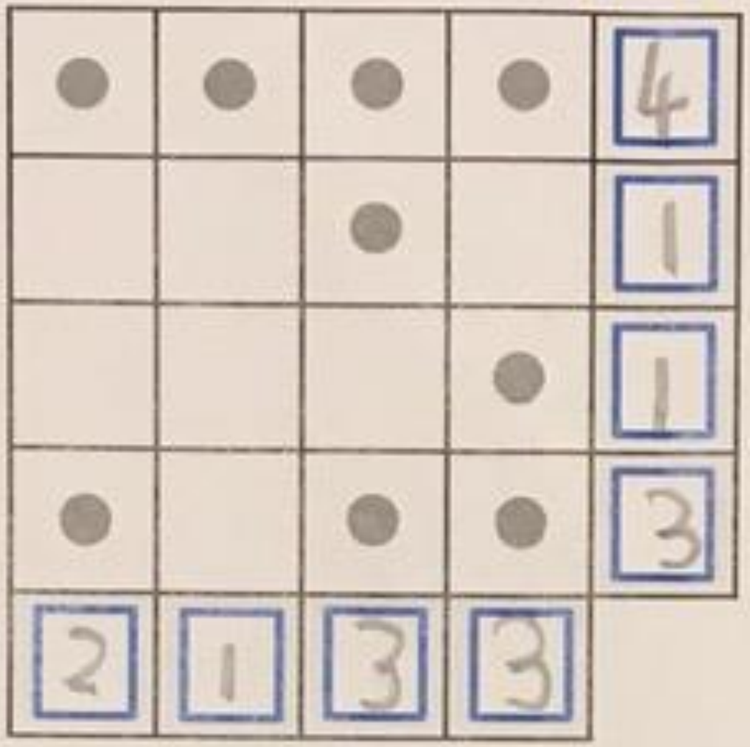


Counters on a Grid

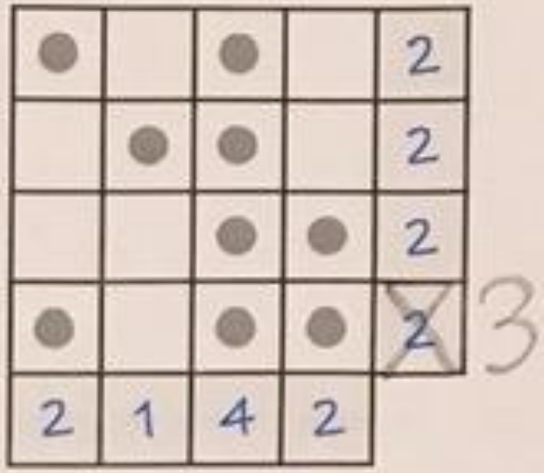
Task A

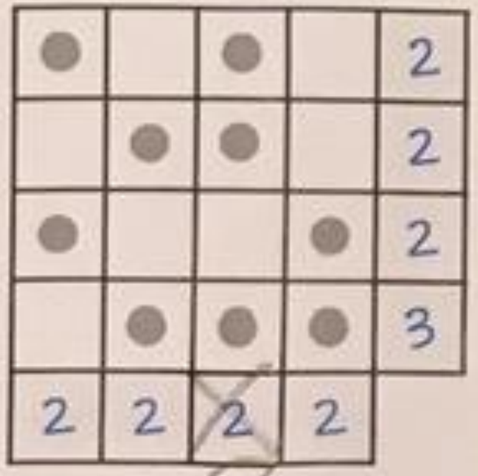
How many dots in each column and row?

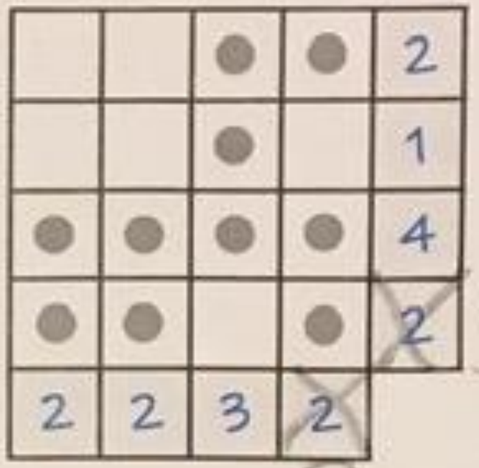
Fill the gaps.

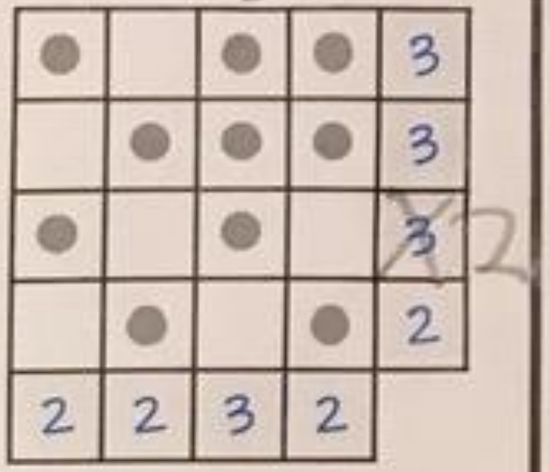


Spot the Mistakes:





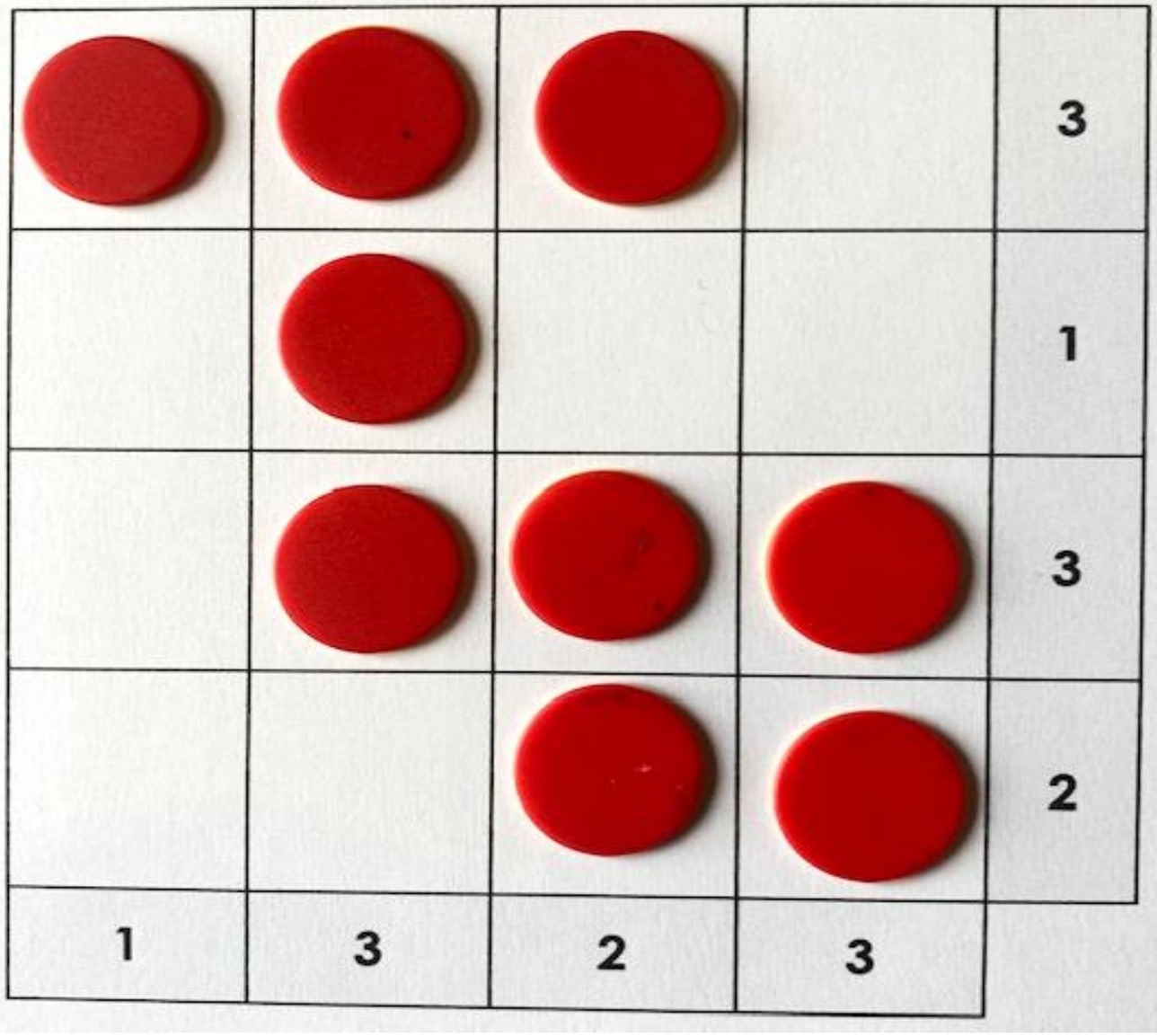




Dots in a Grid

Task B

Put the correct number of counters in each column and row. *Do in two different ways.*

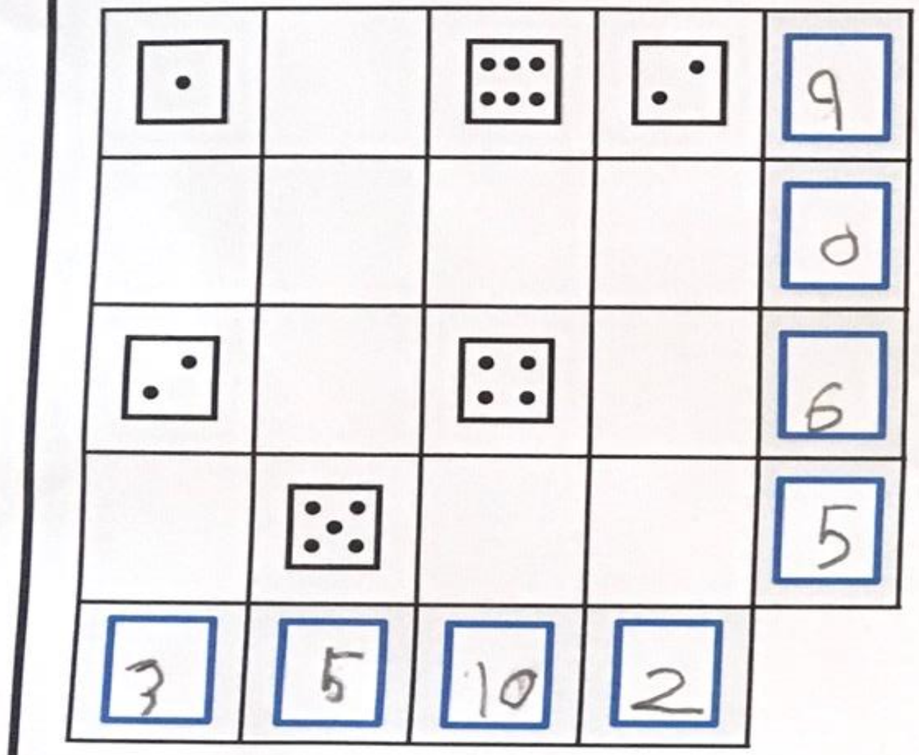


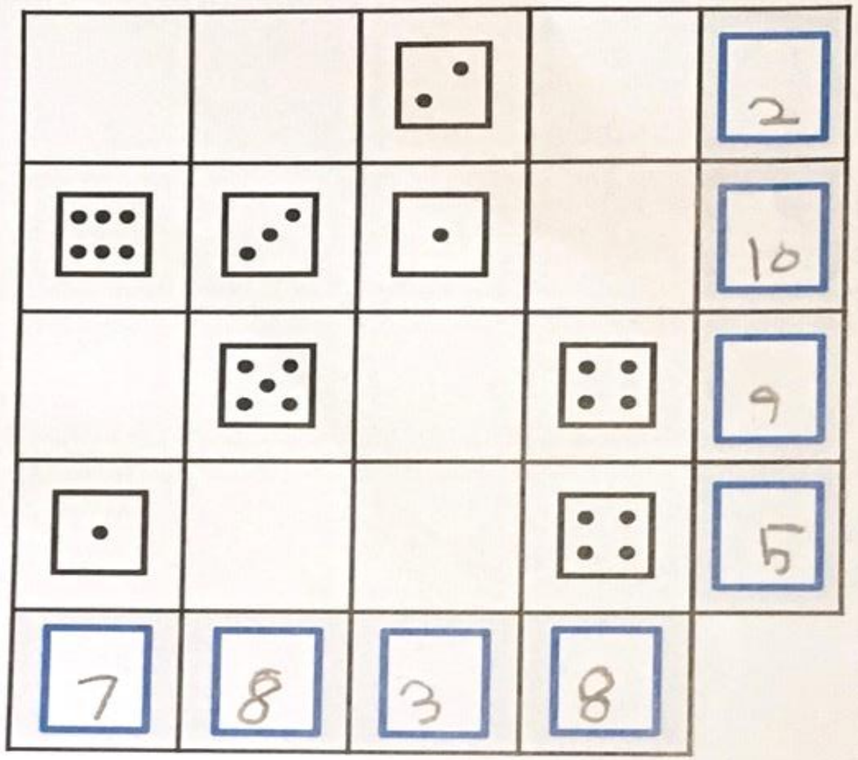
Counters on a Grid

CBt Task C

How many dots in each column and row?

Fill the gaps.





PiXL

Complete using dice.

Have the correct number of dots in each column and row.

Do in two different ways.

				5
				3
				5
				1
6	4	2	2	

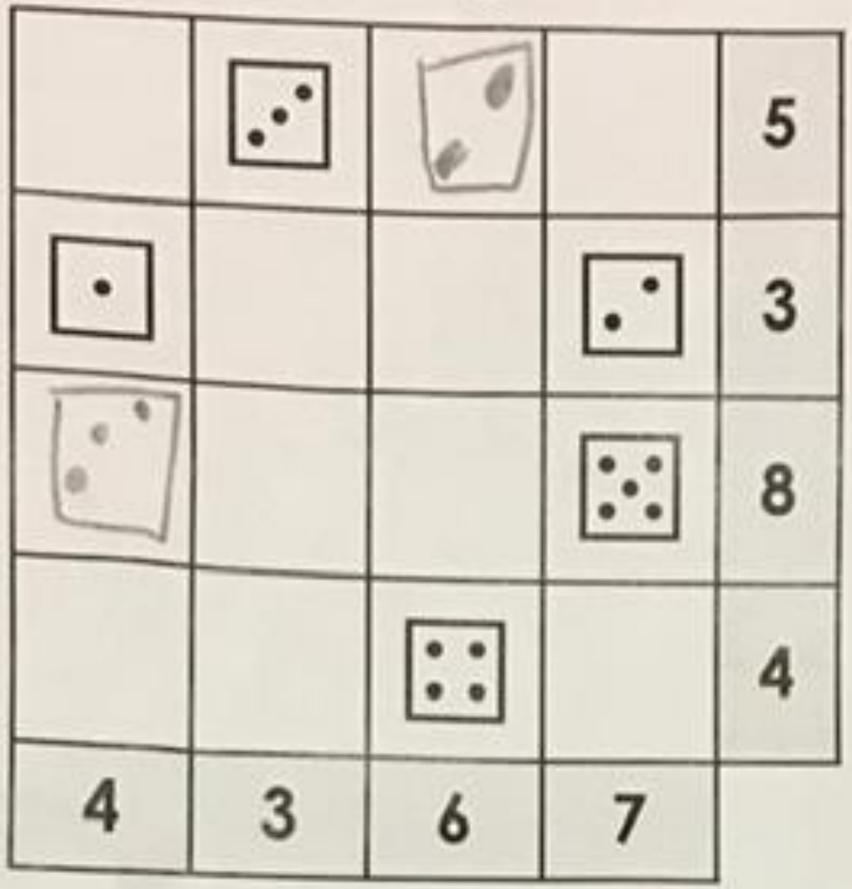
Drawings of answers:

3		2		5
3				3
	3		2	5
	1			1
6	4	2	2	

	3		2	5
1		2		3
5				5
	1			1
6	4	2	2	

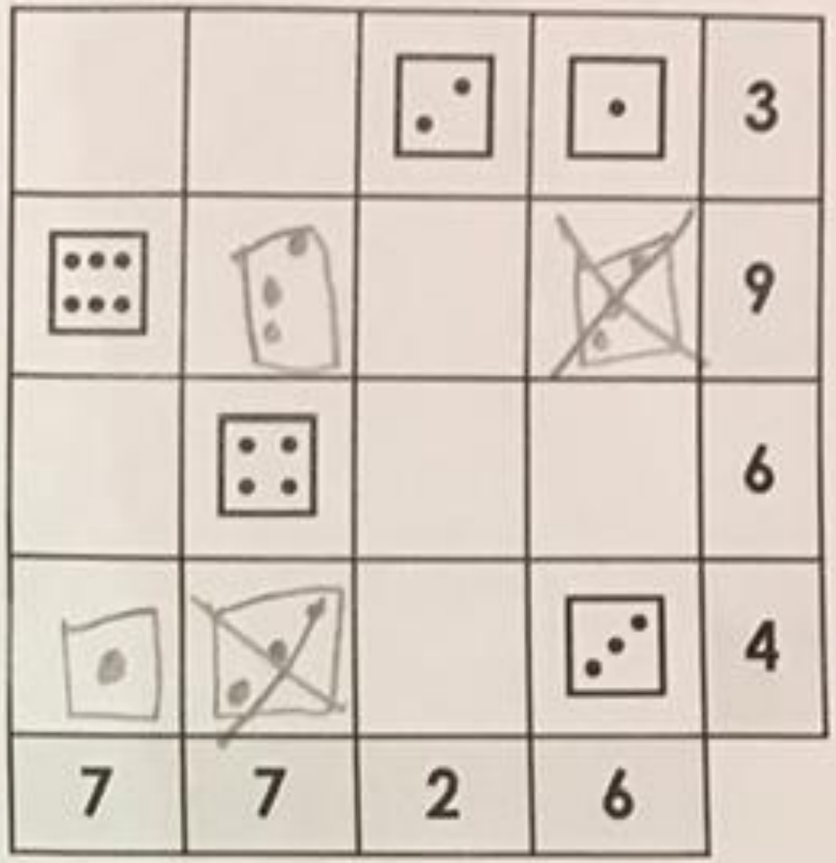
This grid has two dice missing.

Draw the missing dice:



This grid has dice missing.

Draw the missing dice:

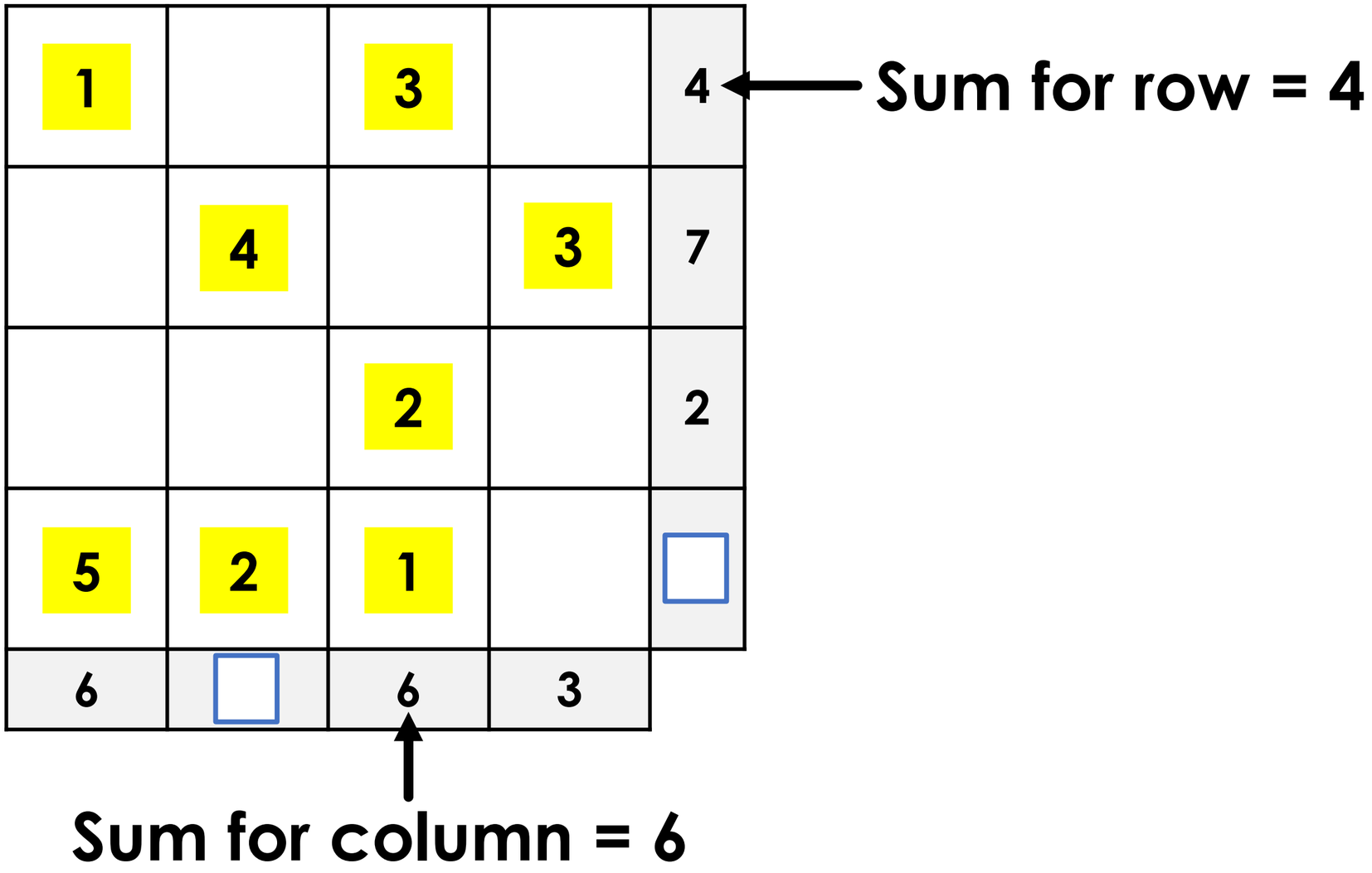


For the column/row to add to... there must be...

PiXL

Digits in a Grid

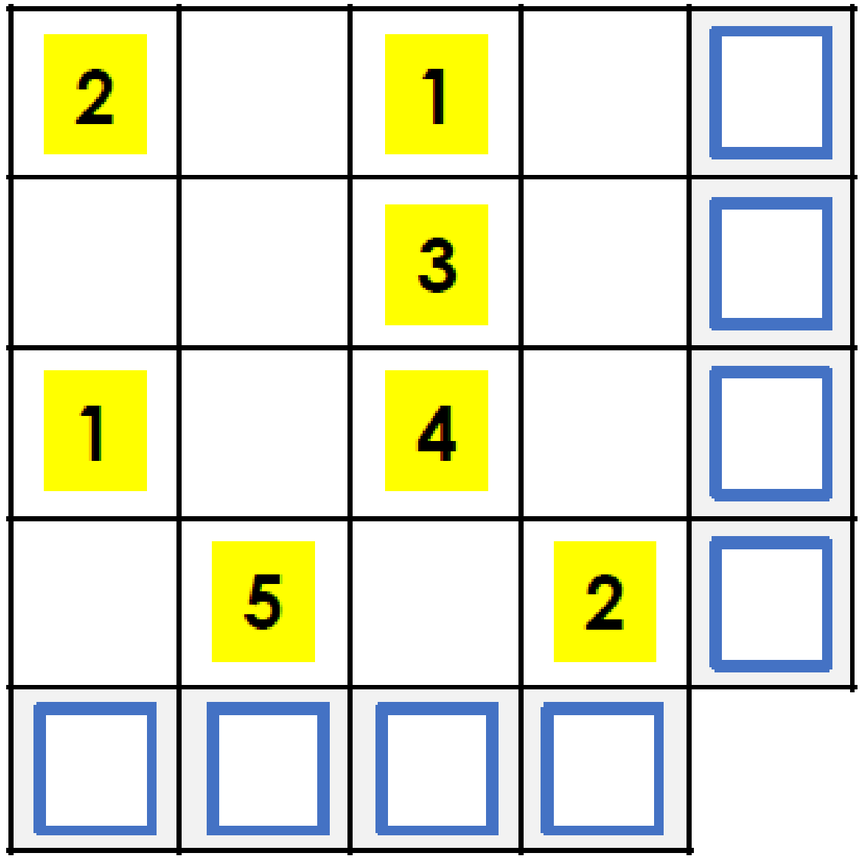
Part 1

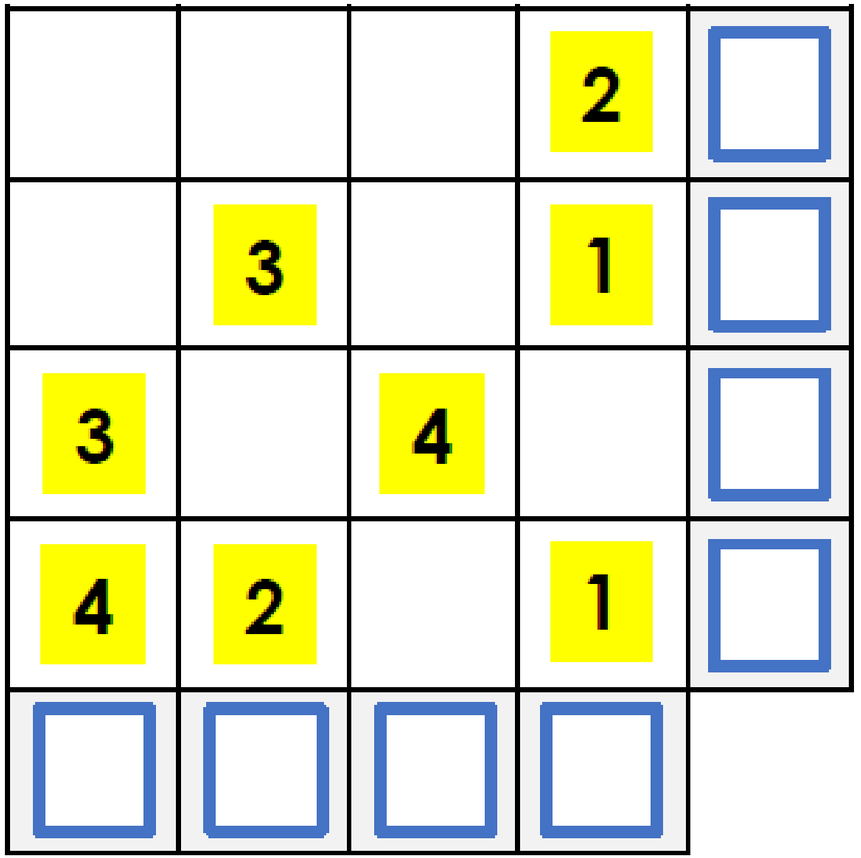


Digits in a Grid

Task A

Find the sum of the numbers in each column and row:





Spot the Mistake

1		5		6
	2			2
2		3		5
		1	5	6
3	2	6	8	

One of the digits is in the wrong place.

Put the numbers 1, 2, 3, 4, 5, 6 on the grid so the sums for the columns and rows are correct:

				6
				6
				8
				1
9	4	5	3	

1	2	3
4	5	6

Draw the answer:

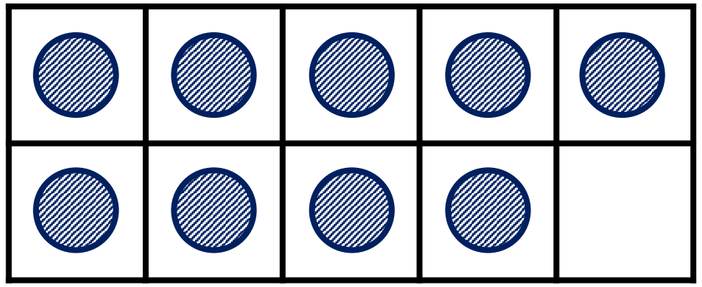
				6
				6
				8
				1
9	4	5	3	

Which number sentence is correct?

$9 - 4 = 5$

$5 - 4 = 9$

$9 - 4 = 6$



Subtraction Bordering Tens

Task A

True or False? ✓ or ✗

$9 - 3 = 6$

$11 - 4 = 8$

$14 - 5 = 11$

$8 - 5 = 4$

$3 - 9 = 6$

$17 - 9 = 8$

$13 - 9 = 4$

$17 - 8 = 9$

Answer using three of the digits:

Explain the Mistake:

□ - □ = □

3 5 4 8

Answer using three of the digits:

Explain the Mistake:

5	–	8	=	3

4

Subtraction Bordering Tens

Task B

Question A:

9 − 5 = 4

Complete using the digits 0→9

0	3	7
1	5	8
2	6	9

There are different answers.

Answers:

9−5=4
7−3=4
6−2=4
5−1=4

Question B:

9 − 2 = 7

Complete using the digits 0→9

0	3	6
1	4	8
2	5	9

There are different answers.

Answers:

9−2=7
8−1=7

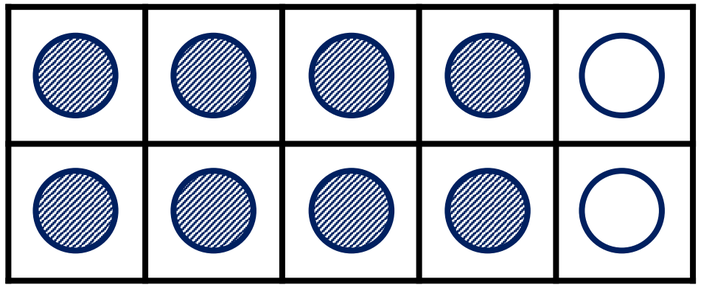
Extension: *Which question can be answered in more ways?* A

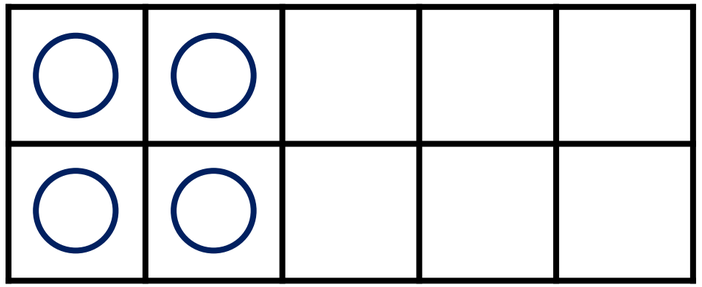
Answer using four of the digits:

Explain the Mistake:

8

1	4	–	6	=	9

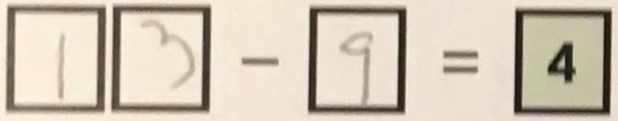




Subtraction Bordering Tens

Task C

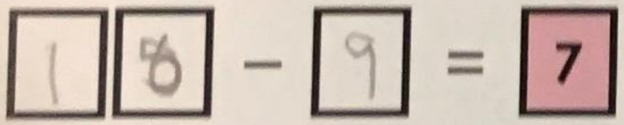
Question X:



Complete using the digits 0→9

0 5 1 6 2 7 8 3 9

Question Y:



Complete using the digits 0→9

0 4 1 5 2 6 3 8 9

Extension: *Which question can be answered in more ways?* Y

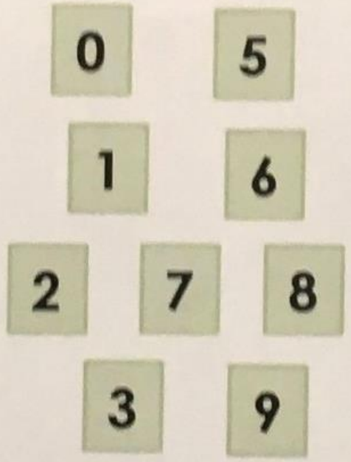
Subtraction Bordering Tens

Task C

Question X:

13 − 9 = 4

Complete using the digits 0→9



There are different answers.

Answers:

13 − 9 = 4

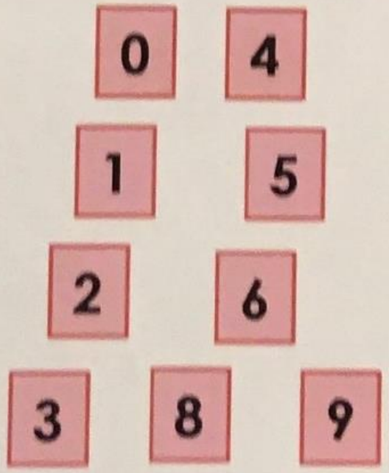
12 − 8 = 4

10 − 6 = 4

Question Y:

18 − 9 = 7

Complete using the digits 0→9



There are different answers.

Answers:

16 − 9 = 7

15 − 8 = 7

~~14 − 7 = 7~~

13 − 6 = 7

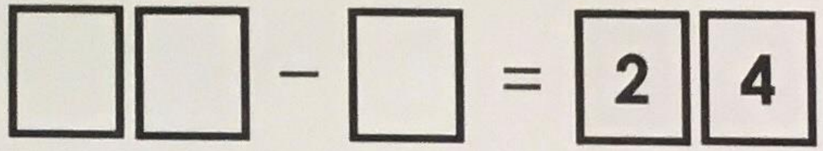
12 − 5 = 7

10 − 3 = 7

Extension: *Which question can be answered in more ways?* Y

Subtraction Bordering Tens

Task D



Complete using the digits 0→9

1 5 7 9 0 3 6 8

Level 1: *I can find an answer*

Level 2: *I can find different answers*

Level 3: *I know how many answers there are*

2 Answers:

30 − 6 = 24

31 − 7 = 24

~~32~~ 22 twotwo?

~~33~~ Same digits

~~34~~ too big!