Date:_____

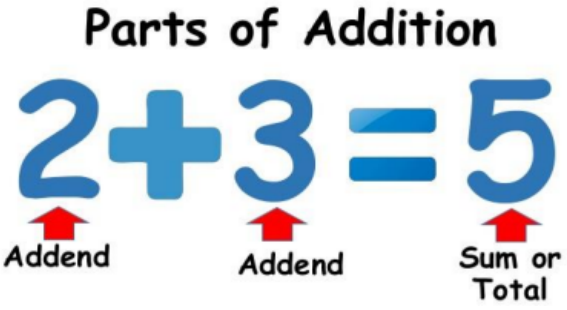
W.S (3.A.1): The commutative rule in addition

Objectives: Understand the commutative property of addition, and use it to simplify calculations.

Understand and explain the relationship between addition and subtraction.

Adding numbers up to 20

In addition we add to make a greater number.

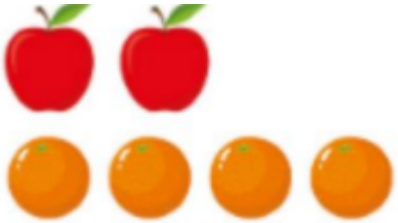


In addition if we switch the order of the addends the total (sum) stays the same. (commutative rule)

4 + 5 = 9 is the same as 5 + 4 = 9

Commutative Rule: changing the order of addends does not change the sum

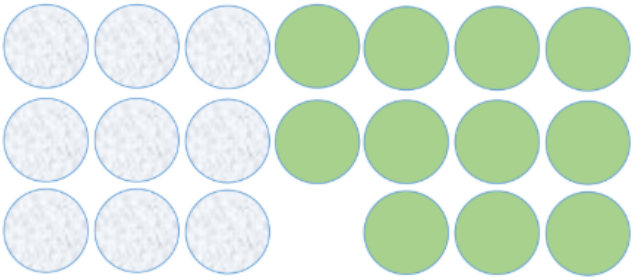
Q1. How many oranges and apples are there?



2 apples + 3 oranges = 5

3 oranges + 2 apples = 5

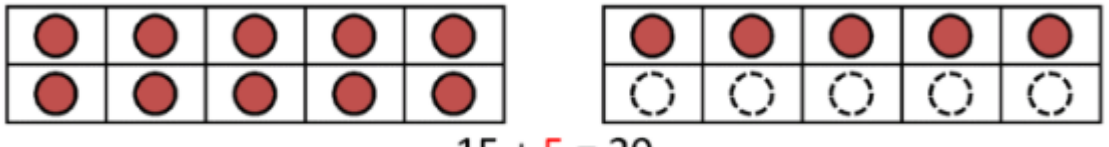
Q2. How many circles are there altogether?



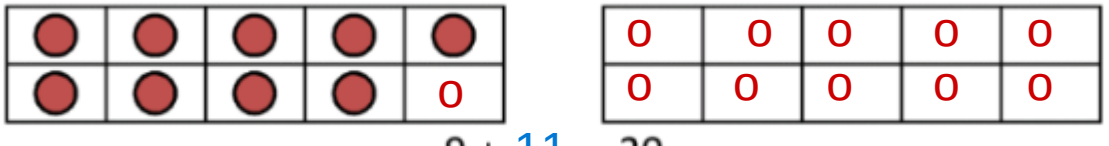
9 grey + 11 green = 20

11 green + 9 grey = 20

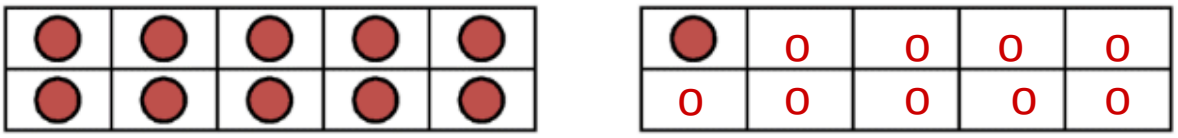
Q3. Find the missing number in the addition sentences below.



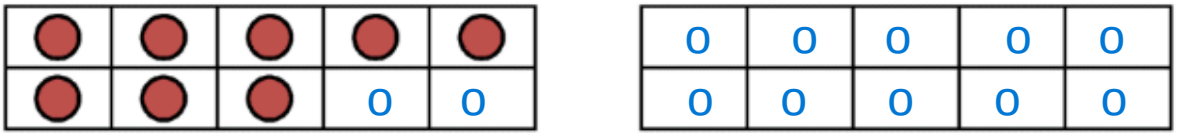
15 + 5 = 20



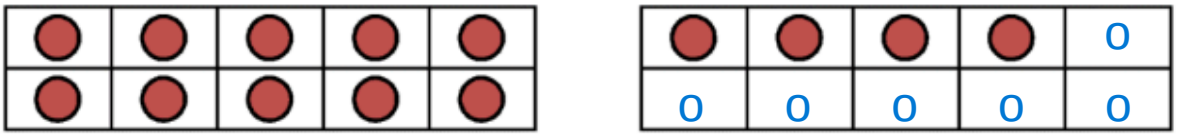
9 + 11 = 20



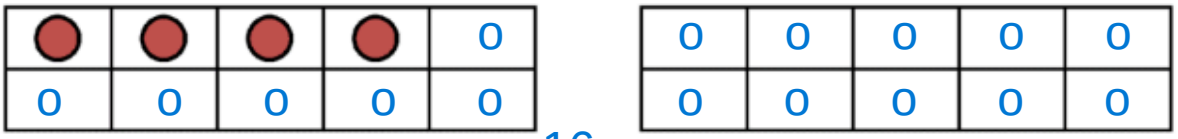
11 + 9 = 20



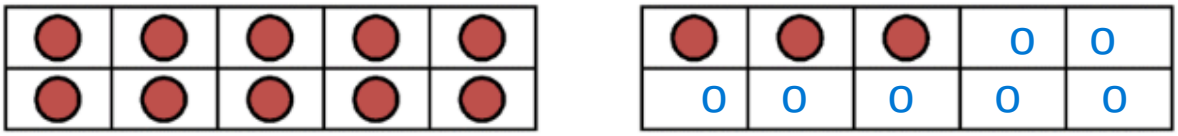
8 + 12 = 20



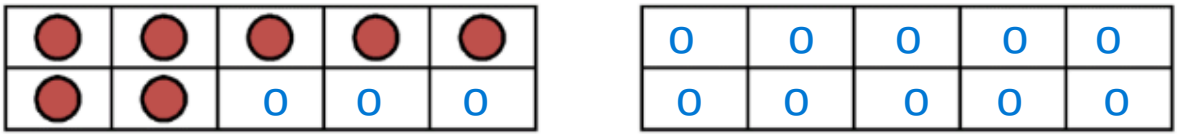
14 + 6 = 20



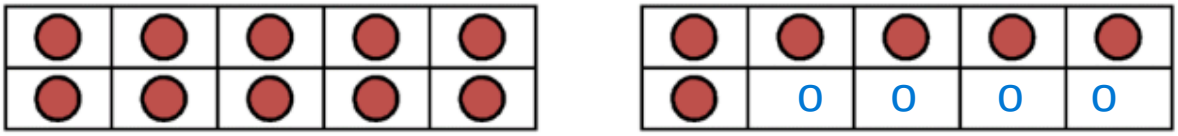
4 + 16 = 20



13 + 7 = 20



7 + 13 = 20

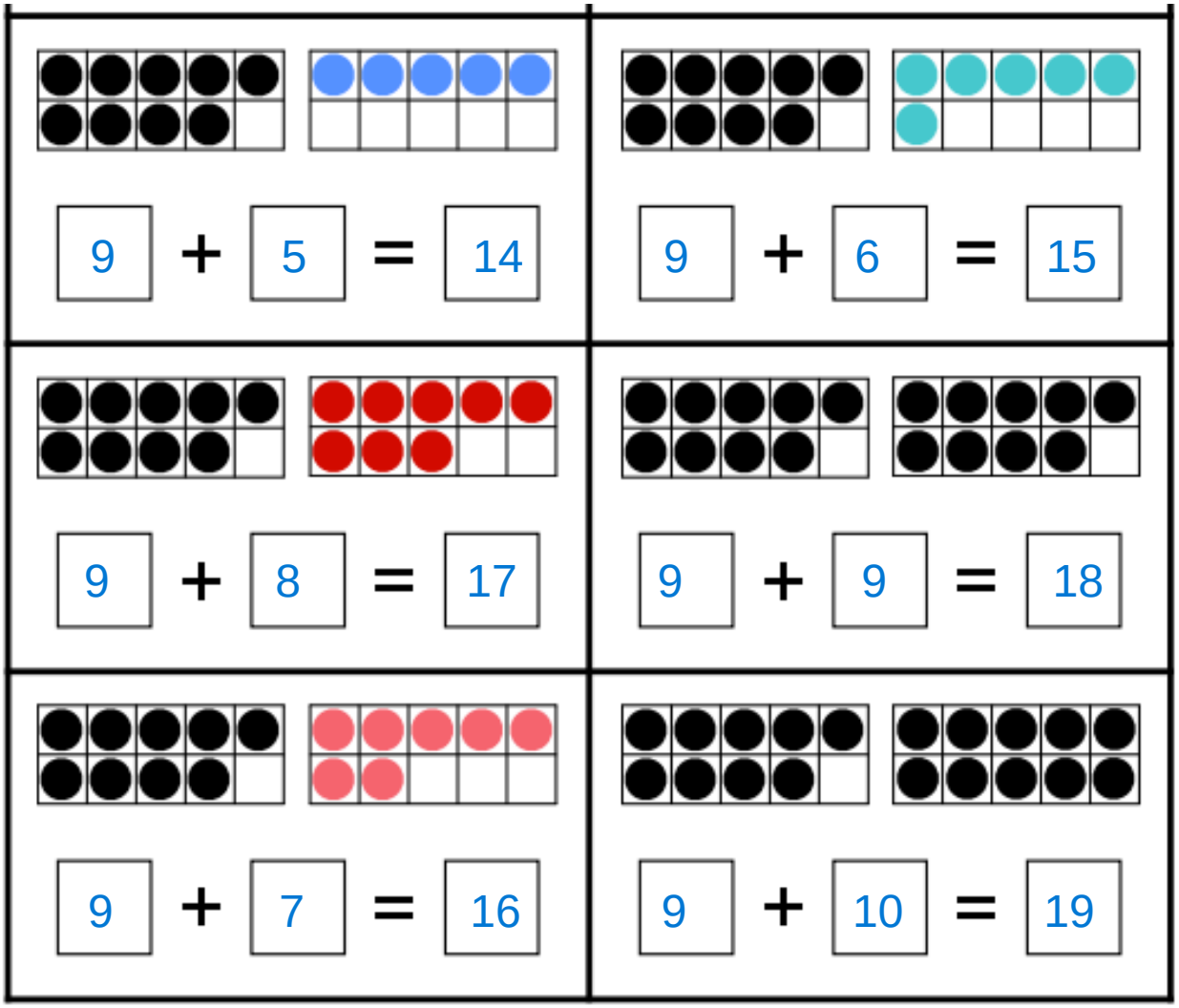


16 + 4 = 20

Q4. Find the total (sum).

8 + 8 = 16	17 + 2 = 19
14 + 3 = 17	2 + 11 = 13
10 + 9 = 19	15 + 5 = 20
5 + 4 = 9	11 + 8 = 19
9 + 3 = 12	19 + 1 = 20

Q5 .Use the counters to make a complete addition sentence.

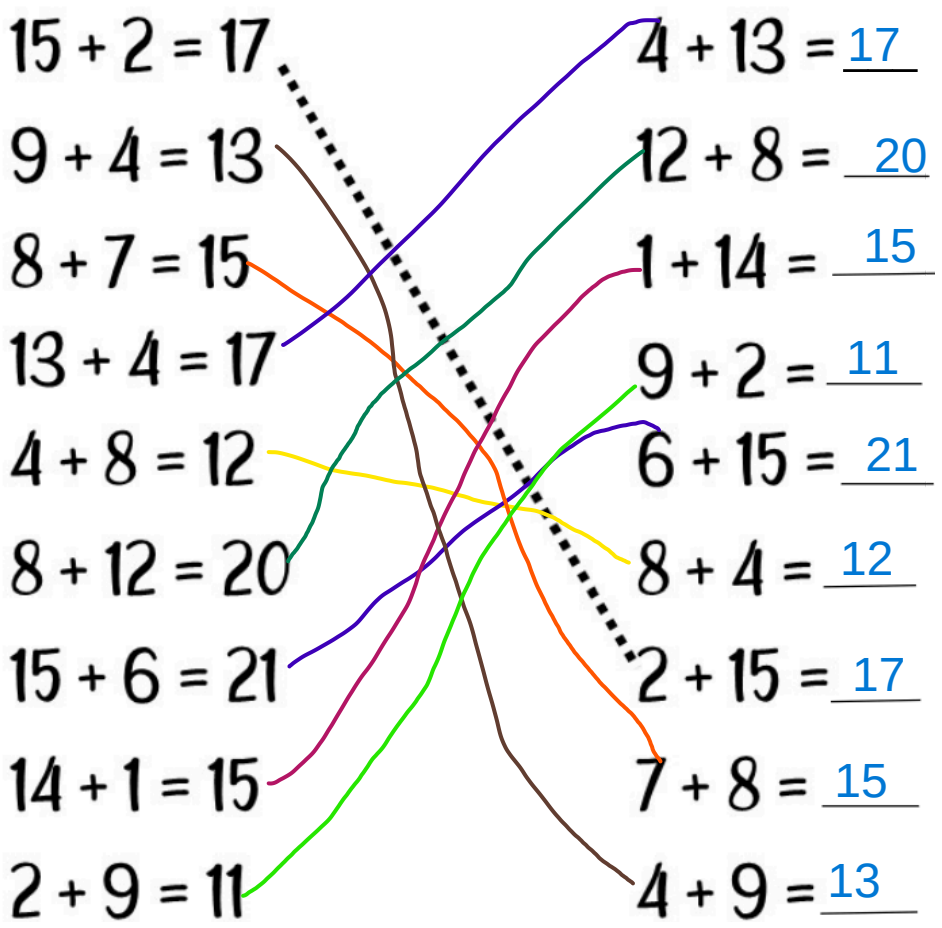


Q6. Add the following numbers using the commutative rule.

Example: 12 + 8 = 20 and 8 + 12 = 20

a) 17 , 3	b) 15 , 5
Way 1 : 17 + 3 = 20	Way 1 : 15 + 5 = 20
Way 2 : 3 + 17 = 20	Way 2 : 5 + 15 = 20

Q7. Match and complete the missing sums.



Q8. Fill in the blanks to make 20.

Use the hearts below to help you.

a) 12 + 8 = 20

b) 5 + 15 = 20

c) 10 + 10 = 20

d) 7 + 13 = 20

Note:

Subtraction can not be commutative.

Example:

5 - 3 = 2 but 3 - 5 doesn't equal to 2

The commutative rule applies only to addition and not to subtraction.

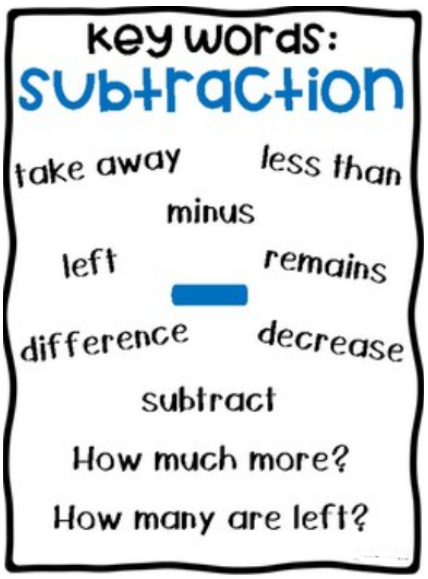
Subtract numbers up to 20

- The opposite of addition is subtraction, where the number gets smaller because we take away from it.
- The keywords for subtraction are take away, give away, sell, less, minus,left, difference.

It is better to start subtraction from the greater number.

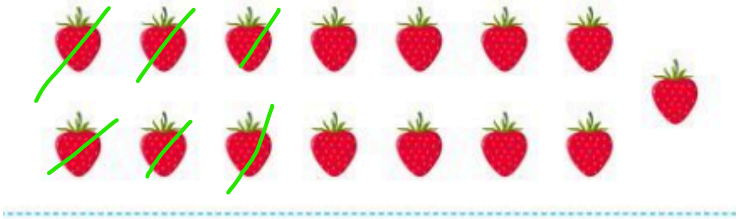
13 - 3 = 10

greater - smaller = the difference



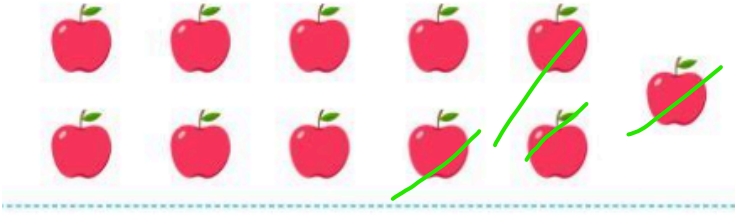
Q9. Cross out to find how much is left after subtracting.

a) 15 - 6 = 9

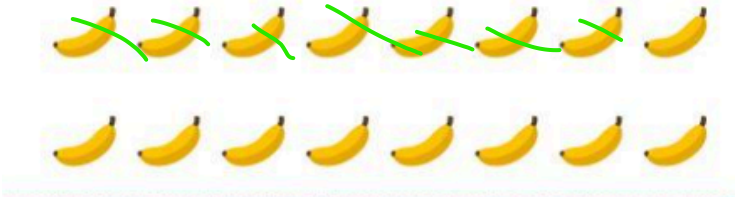


b) 12 - 7 = 5

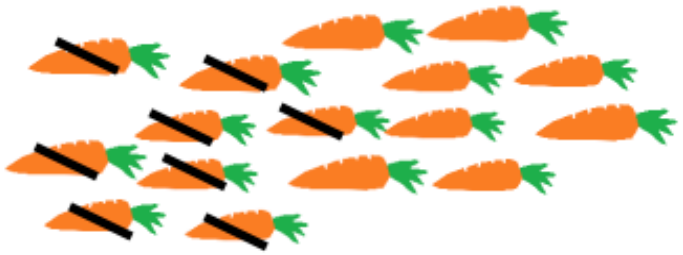
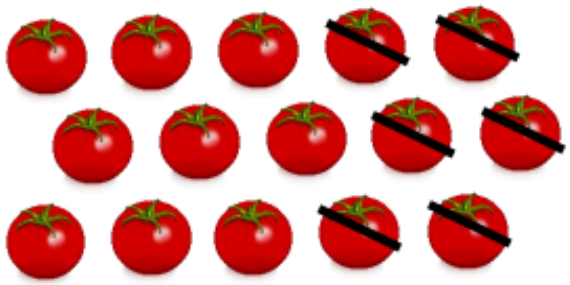
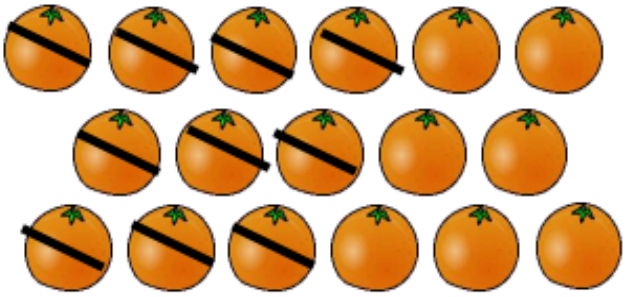
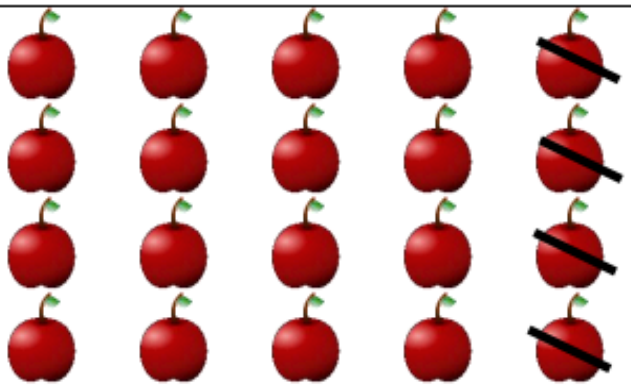
c) 11 - 4 = 7



d) 16 - 8 = 8



Q10.Fill in the blanks to find how much farmer Joe has left.

	Farmer Joe harvested 16 carrots. He gave away 8 carrots to his neighbour. 16 – 8 = 8
	Farmer Joe harvested 15 tomatoes. He gave away 6 tomatoes to his neighbour. 15 – 6 = 9
	Farmer Joe harvested 17 oranges. He gave away 10 oranges to his neighbour. 17 – 10 = 7
	Farmer Joe harvested 20 apples. He gave away 4 apples to his neighbour. 20 – 4 = 16

Relate addition and subtraction.

- Addition and subtraction are related.
- A fact family is a set of 3 numbers that are related to one another through addition and subtraction
- We can write 4 different sentences using the same 3 numbers like the example below.

Fact Family

$2 + 3 = 5$ $\quad$ $5 - 3 = 2$

$3 + 2 = 5$ $\quad$ $5 - 2 = 3$

Q12. Find the missing number in the fact family below.

a $4 + 3 =$ 7 $\quad$ b $3 + 4 =$ 7

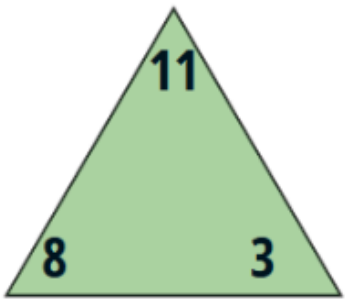
c $7 - 4 =$ 3 $\quad$ d $7 - 3 =$ 4

Q11. Use the numbers (**20**, **18** , **2**) to make up 2 <u>different</u> **addition** and 2 different **subtraction** sentences.

18 + 2 = 20 $\quad$ 20 - 2 = 18

2 + 18 = 20 $\quad$ 20 - 18 = 2

Q12. Write the fact family for each of the following.

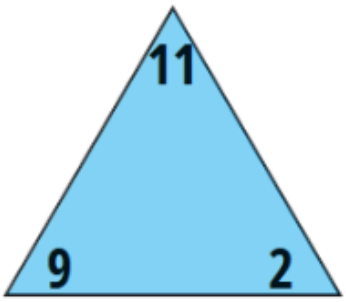


8 + 3 = 11

3 + 8 = 11

11 - 3 = 8

11 - 8 = 3

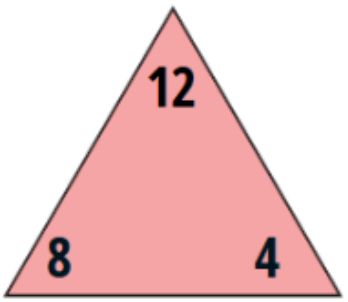


9 + 2 = 11

2 + 9 = 11

11 - 2 = 9

11 - 9 = 2

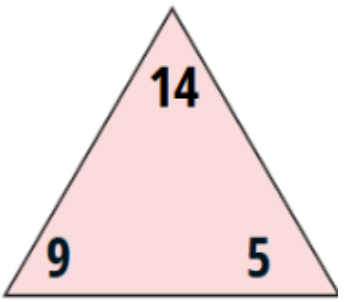


8 + 4 = 12

4 + 8 = 12

12 - 8 = 4

12 - 4 = 8



9 + 5 = 14

5 + 9 = 14

14 - 5 = 9

14 - 9 = 5

Q13. Write the correct sign in the blanks to make the sentences true.

15 - 3 = 12

17 - 8 = 9

11 - 2 = 9

11 + 5 = 16

16 + 4 = 20

13 - 11 = 2

12 + 3 = 15

8 + 7 = 15

16 - 6 = 10

6 + 8 = 14

Q15. A class made a **tally chart** of the vehicles and people they saw passing the school in the morning.

Things that pass the school		
Thing	Tally	
	𝍸 𝍸 𝍸 |	16
	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 ||||	34
	𝍸 |||	8
	||	2
	𝍸 |	6

- How many **people** passed the school ? 16
- How many green **cars** passed the school? 34
- How many **vehicles** passed the school? 50
- Show the total number of vehicles passed as tally marks.

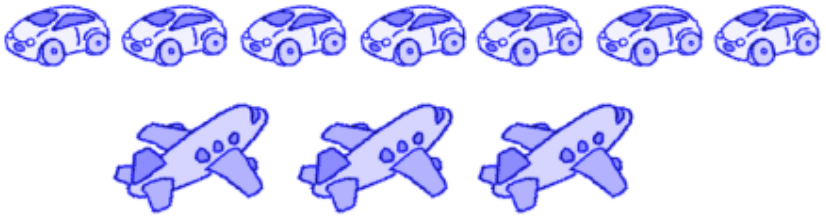
  𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸

- If <u>double</u> the number of **motorcycles** passed.

  Calculate the new **total** number of vehicles passed and show it as a tally mark.

  Total number: 52 Tally mark: 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 ||

Q16. Complete the sentences.



a) How many toys are there in all?

7 + 3 = 10 or 3 + 7 = 10

b) How many toy cars are there?

Total toys - the toy planes = the toy cars

10 - 3 = 7

c) How many toy planes are there?

Total toys - the toy cars = the toy planes

10 - 7 = 3

d) Find the **difference** between the toy cars and planes.

Toy cars - toy planes = the difference

7 - 3 = 4

Q17. Complete the sentences.

a) How many rabbits are there in all?

9 + 5 = 14

or

5 + 9 = 14

b) How many white rabbits are there?

Total - green = white

14 - 5 = 9

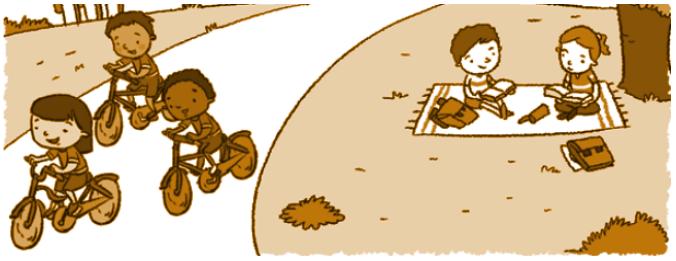
c) How many green rabbits are there?

Total - white = green

14 - 9 = 5

Q18. Write a fact family.

a)



3 + 2 = 5

2 + 3 = 5

5 - 2 = 3

5 - 3 = 2

b)

4 + 3 = 7

3 + 4 = 7

7 - 3 = 4

7 - 4 = 3

c)

9 + 8 = 17

8 + 9 = 17

17 - 8 = 9

17 - 9 = 8

Q19. Raj makes 6 turkey sandwiches and 12 chicken sandwiches.

a) How many sandwiches does he prepare altogether?

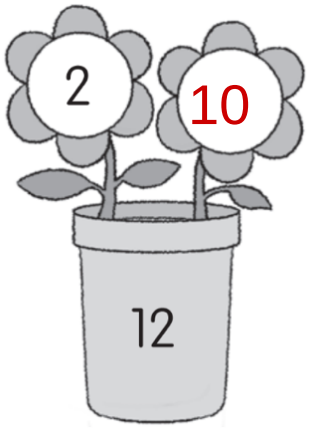
12 + 6 = 18

b) He eats 4 sandwiches.. How many sandwiches are left?

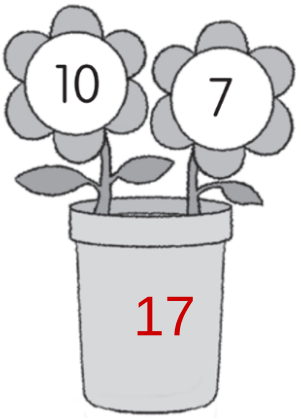
18 - 4 = 14

Q20. The numbers on the flowers make the number on the pot. Write the missing numbers.

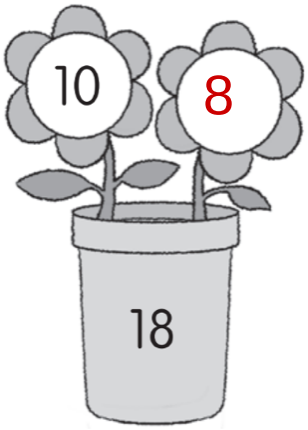
a)



b)



c)



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