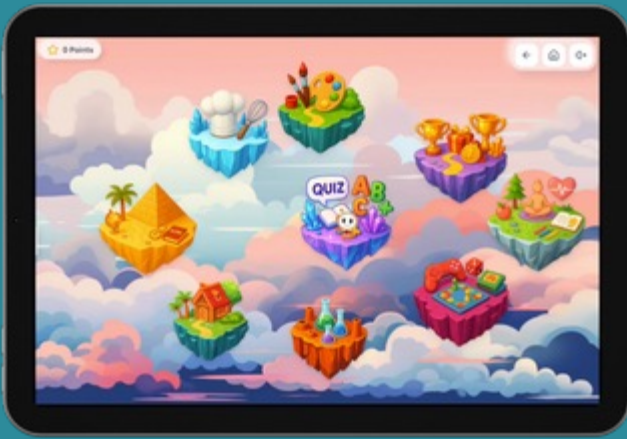


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Part-Part Whole - Year 2

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PARTS MAKE A WHOLE

Two parts join to make one whole.



$$6 + 8 = 14$$

$$8 + 6 = 14$$

$$14 - 6 = 8$$

$$14 - 8 = 6$$



The parts can swap places.
The whole stays the same.



THE FACT FAMILY FOUR



One part-part-whole model makes four related facts.



2



4



$$9 + 8 = 17$$

$$8 + 9 = 17$$

$$17 - 9 = 8$$

$$17 - 8 = 9$$



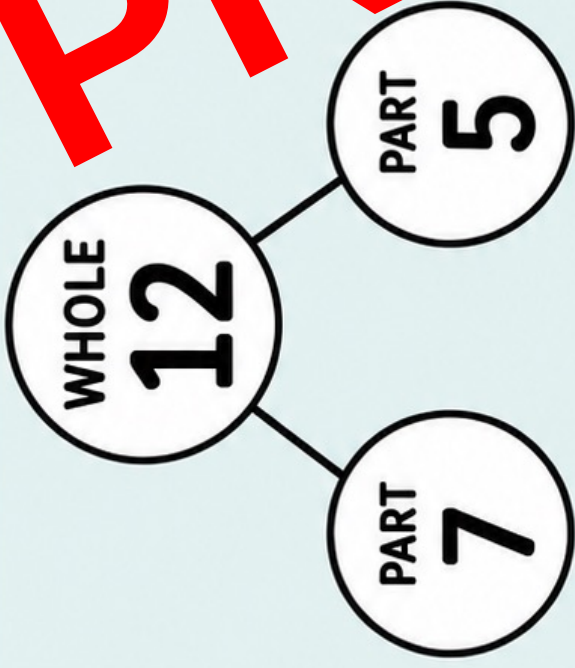
Start with the two parts for addition.



Start with the whole for subtraction.



Check: each fact uses the same three numbers.



$$9 + 6 = 15$$

$$6 + 9 = 15$$

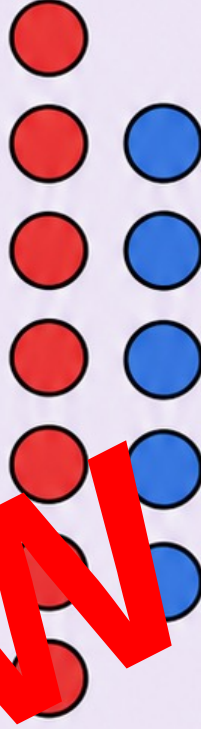


$$18 - 10 = 8$$

$$18 - 8 = 10$$



7 red counters and
5 blue counters
make 12 counters.





WHOLE

15

PART

9

PART

6



$$10 + 8 = 18$$

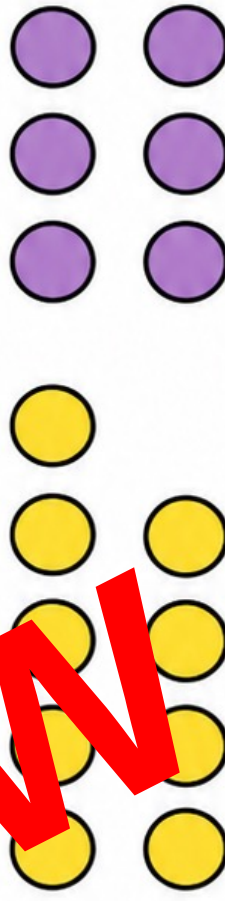
$$8 + 10 = 18$$



$$12 - 7 = 5$$

$$12 - 5 = 7$$

9 yellow counters and
6 purple counters
make 15 counters.



★

WHOLE
18

PART
10

PART
8

☆

★

$7 + 5 = 12$

$5 + 7 = 12$

○

★

$15 - 9 = 6$

$15 - 6 = 9$

△

★

10 teal counters and
8 orange counters
make 18 counters.

◇



PART-PART-WHOLE CARD SORT

2

Sorting Mat and Instructions

1



1. Cut apart the 12 cards.
2. Sort them into three fact families.
3. Each family uses the same three numbers.
4. Place four matching cards in each group.

FAMILY 1

The three numbers: _____ , _____ , _____

FAMILY 2

The three numbers: _____ , _____ , _____

FAMILY 3

The three numbers: _____ , _____ , _____



PARTITION BUILDER • WHOLE 10



Build two parts. The parts must join to make 10.



PART 1

PART 2

$$\underline{\quad} + \underline{\quad} = 10$$

$$\underline{\quad} + \underline{\quad} = 10$$

$$10 - \underline{\quad} = \underline{\quad}$$

$$10 - \underline{\quad} = \underline{\quad}$$



Can you build 10 a different way?



★ PARTITION BUILDER • WHOLE 20

Build two parts so the parts must join to make 20.

PART 1

PART 2

$$\underline{\quad} + \underline{\quad} = 20$$

$$\underline{\quad} + \underline{\quad} = 20$$

$$20 - \underline{\quad} = \underline{\quad}$$

$$20 - \underline{\quad} = \underline{\quad}$$

..... Can you build 20 a different way?

PARTITION BUILDER • WHOLE 30

Build two parts. The parts must join to make 30.

WHOLE

30

PART 1

PART 2

$$\underline{\quad} + \underline{\quad} = 30$$

$$\underline{\quad} + \underline{\quad} = 30$$

$$30 - \underline{\quad} = \underline{\quad}$$

$$30 - \underline{\quad} = \underline{\quad}$$

Can you build 30 a different way?



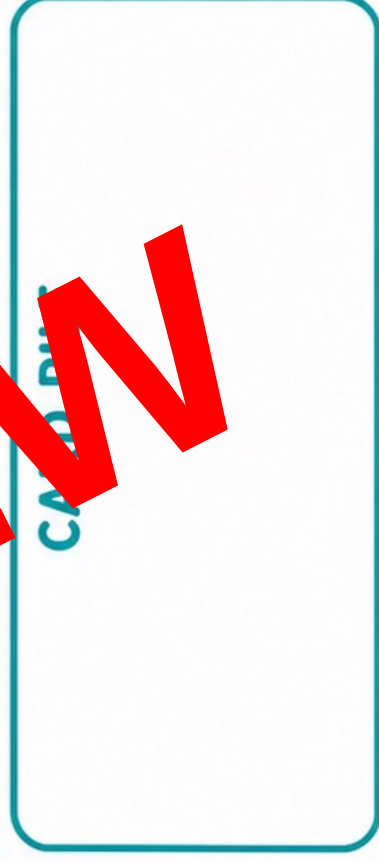
FACT FAMILY PATH



Race from START to FINISH and build related facts.



STAR = Pick a challenge card



★ FACT FAMILY PATH • CHALLENGE CARDS ★

You need: 1 die, 1 counter per player, the board and these cards.

Take turns to roll and move. If you land on a star, pick a card. Answer correctly to stay; if not, move back one space. First to FINISH wins.



Whole 14.
One part is 9.
Find the missing part.





The parts are 7 and 8.
Find the whole.





Write the four facts for 3, 10 and 16.





Whole 18.
One part is 11.
Find the missing part.





True or false?
 $13 - 5 = 8$
belongs to 5, 8 and 13.





Write two addition facts using 9, 4 and 13.





Write two subtraction facts using 12, 7 and 5.





Show two different ways to partition 20.





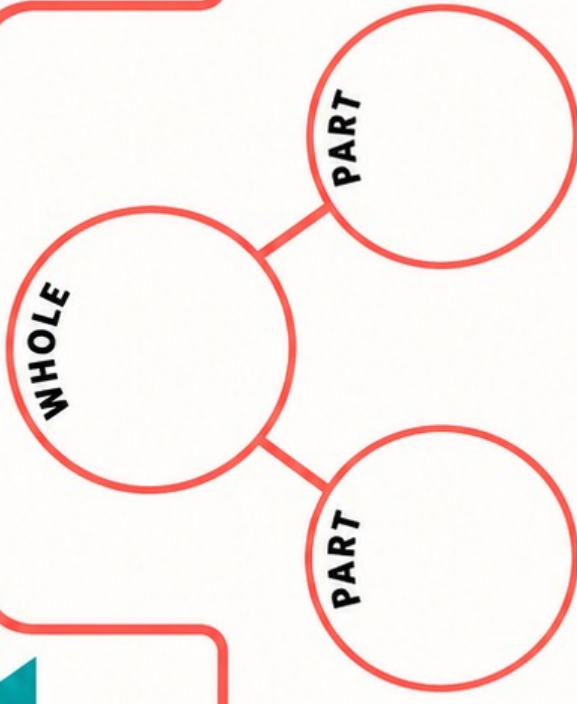
SPIN

AND

PARTITION



Build a new part-part-whole for family each turn.



+	_____	+	_____	=	_____	_____
+	_____	+	_____	=	_____	_____
-	_____	-	_____	=	_____	_____
-	_____	-	_____	=	_____	_____

1.

Spin a whole.

2.

Choose two parts.

3.

Complete the four facts.

4.

A new partition scores 1 point.



5

SPIN AND PARTITION • SCOREBOARD

3



12

8

Record each new partition. Complete a star challenge to score 2 points.

PLAYER 1

ROUND	WHOLE	PART 1	PART 2	POINTS
1				
2				
3				
4				
5				



Use 0 as one part.



Make two equal parts.



Use a part greater than 10.



Partition the same whole a new way.



Winner: _____

Score: _____



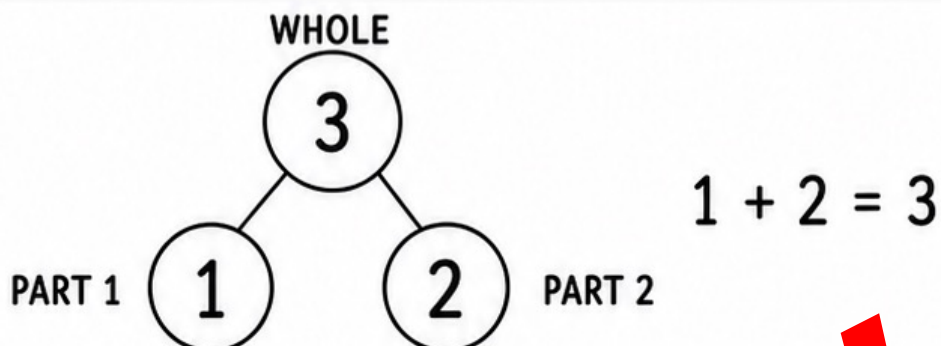
Name: _____

Date: _____

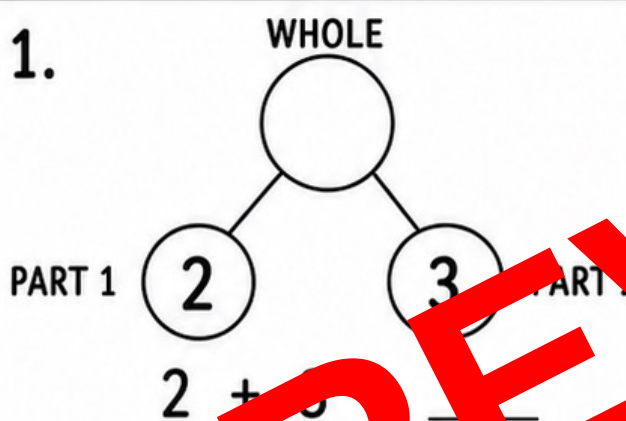
BUILD THE WHOLE • SUPPORT

Add the two parts. Write the whole in the top circle.

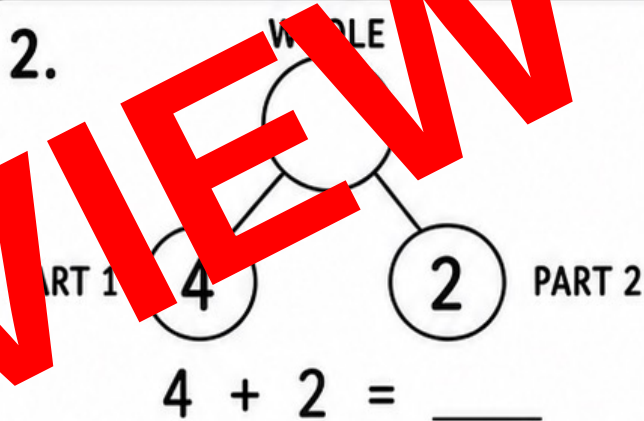
Example



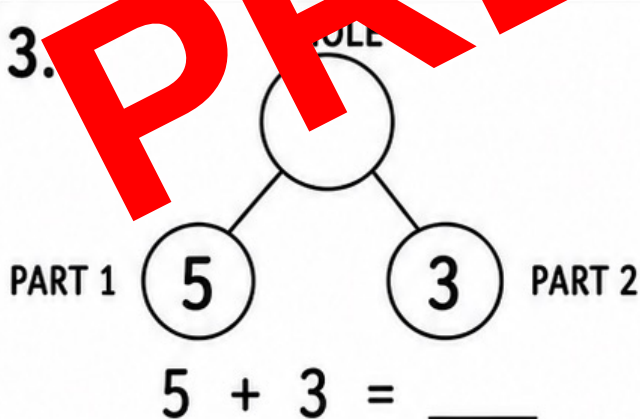
1.



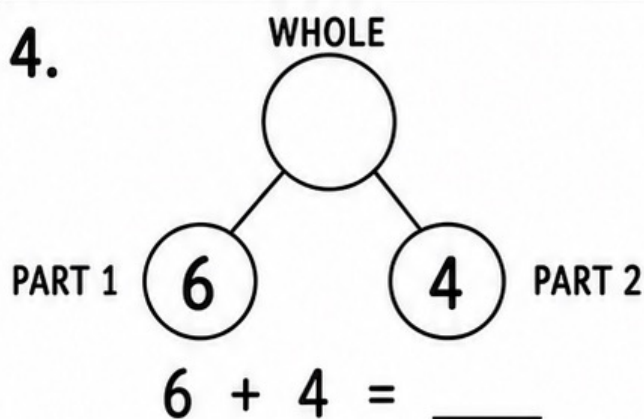
2.



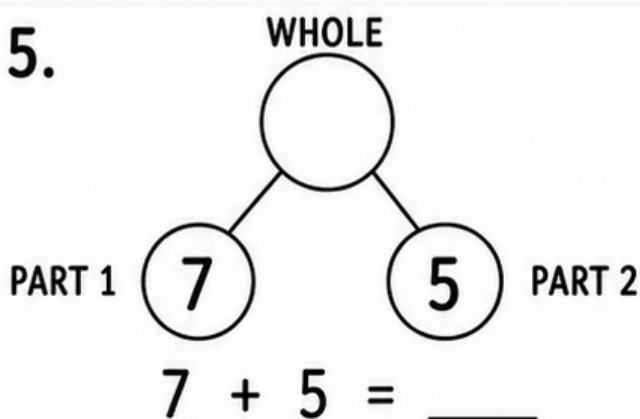
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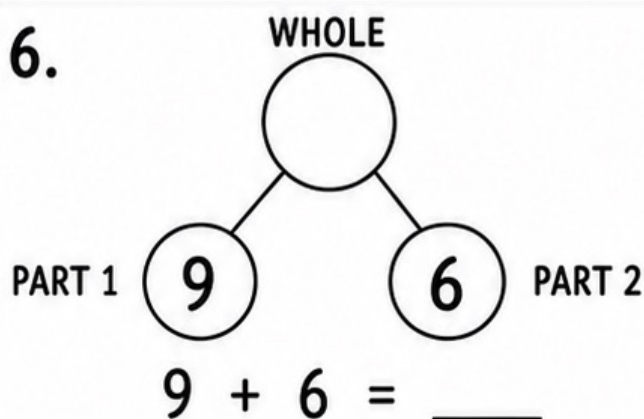
4.



5.



6.



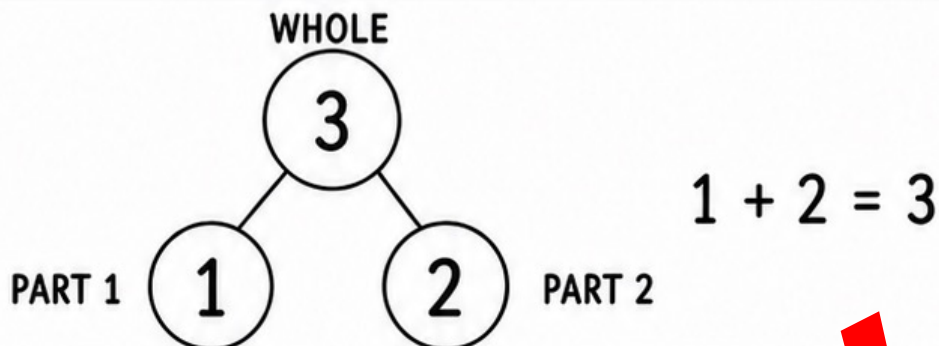
Name: **ANSWERS**

Date: _____

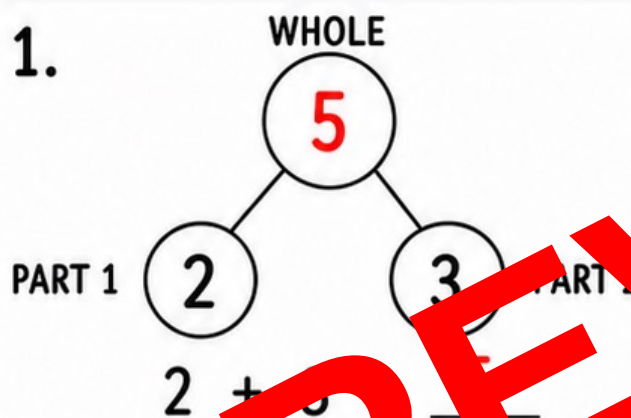
BUILD THE WHOLE • SUPPORT

Add the two parts. Write the whole in the top circle.

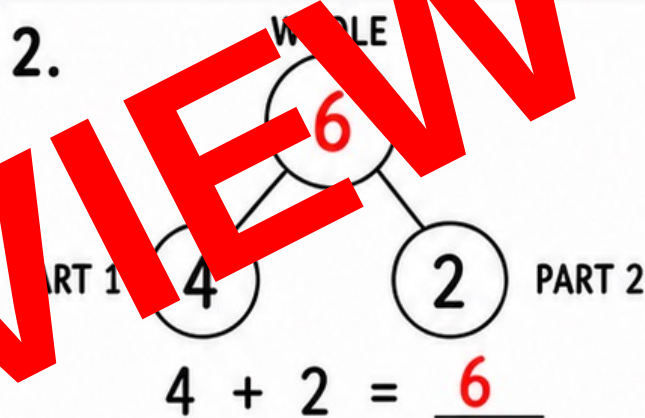
Example



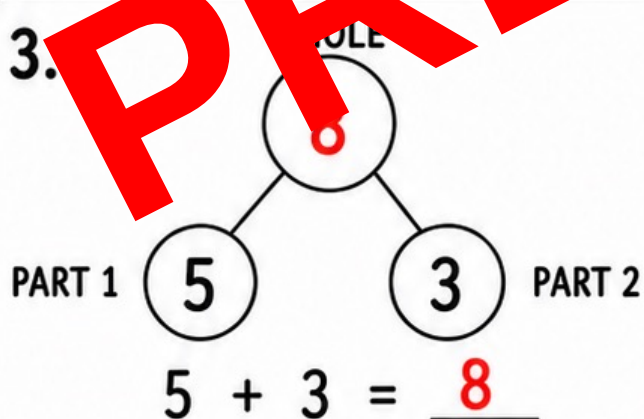
1.



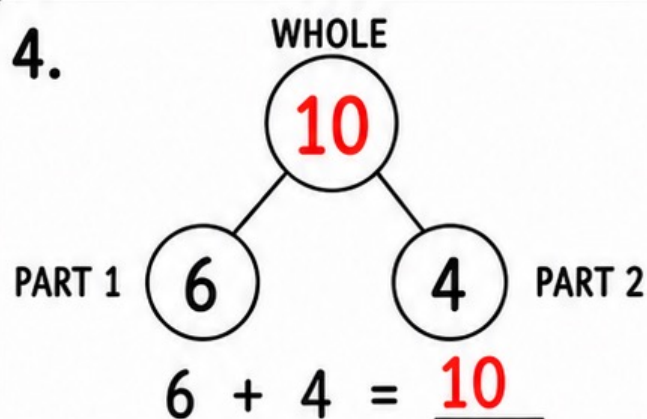
2.



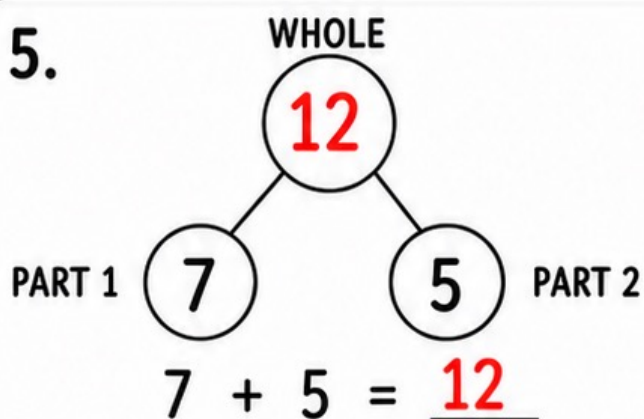
3.



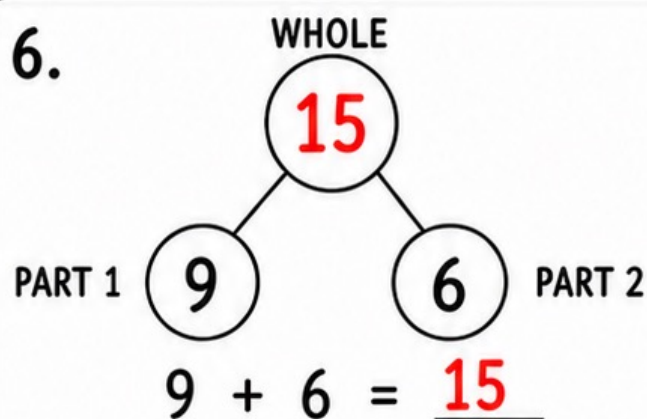
4.



5.



6.



Name: _____

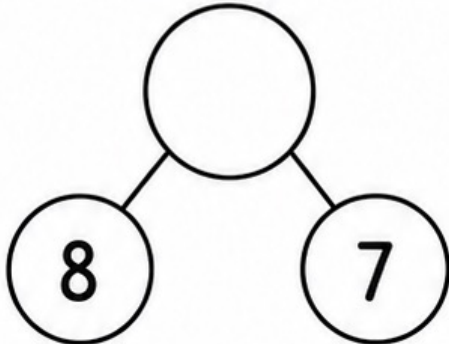
Date: _____



BUILD THE WHOLE • CORE

Add the parts. Complete the whole and both addition facts.

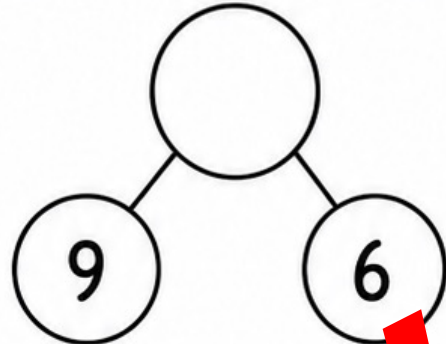
1.



$$8 + 7 = \underline{\quad}$$

$$7 + 8 = \underline{\quad}$$

2.



$$9 + 6 = \underline{\quad}$$

$$6 + 9 = \underline{\quad}$$

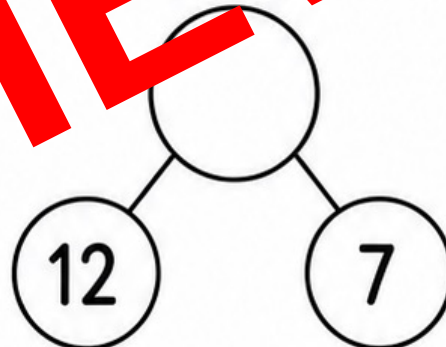
3.



$$11 + 4 = \underline{\quad}$$

$$4 + 11 = \underline{\quad}$$

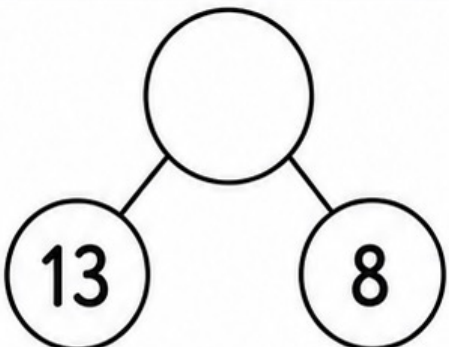
4.



$$12 + 7 = \underline{\quad}$$

$$7 + 12 = \underline{\quad}$$

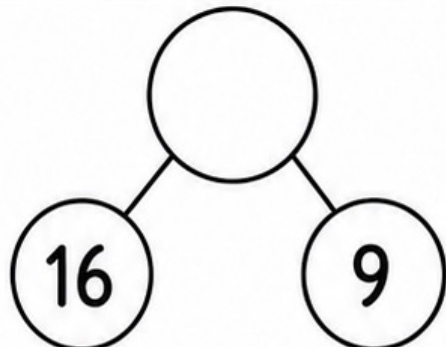
5.



$$13 + 8 = \underline{\quad}$$

$$8 + 13 = \underline{\quad}$$

6.



$$16 + 9 = \underline{\quad}$$

$$9 + 16 = \underline{\quad}$$

PREVIEW

Name: _____

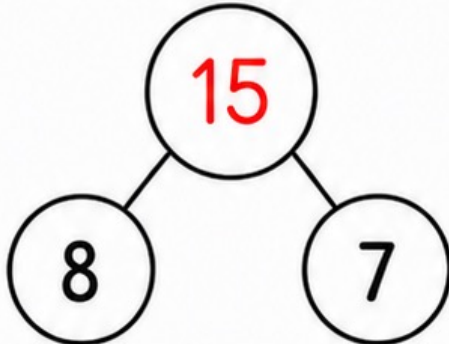
ANSWERS

Date: _____

BUILD THE WHOLE • CORE

Add the parts. Complete the whole and both addition facts.

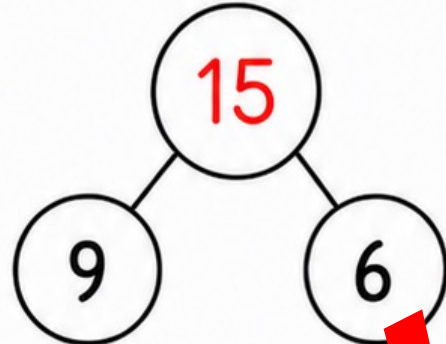
1.



$$8 + 7 = \underline{15}$$

$$7 + 8 = \underline{15}$$

2.



$$9 + 6 = \underline{15}$$

$$6 + 9 = \underline{15}$$

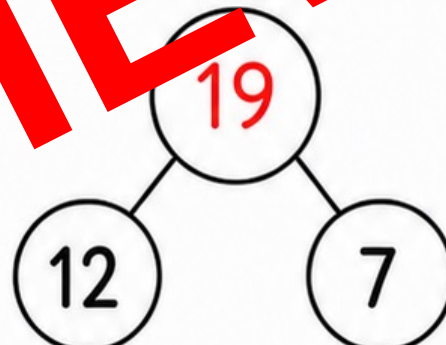
3.



$$11 + 4 = \underline{15}$$

$$4 + 11 = \underline{15}$$

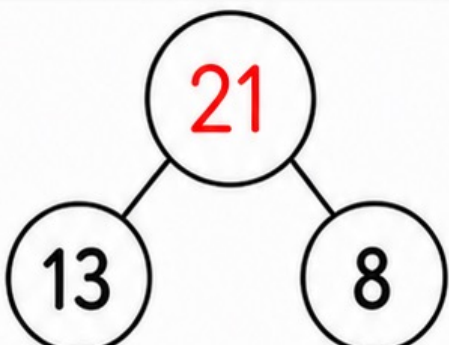
4.



$$12 + 7 = \underline{19}$$

$$7 + 12 = \underline{19}$$

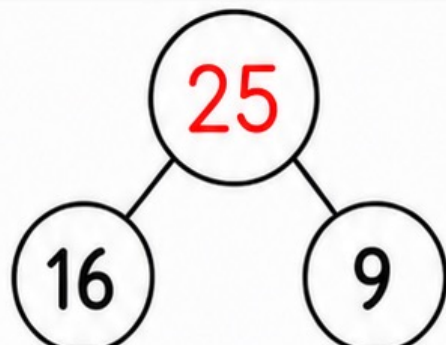
5.



$$13 + 8 = \underline{21}$$

$$8 + 13 = \underline{21}$$

6.



$$16 + 9 = \underline{25}$$

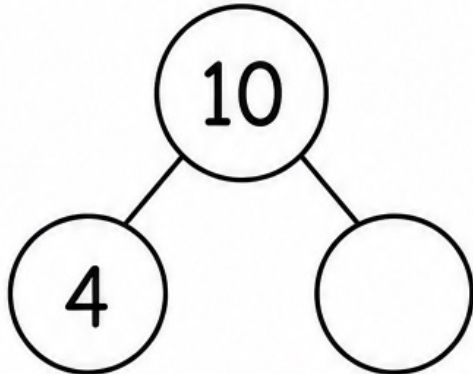
$$9 + 16 = \underline{25}$$

FIND THE MISSING PART • SUPPORT

Name: _____ Date: _____

Use the whole and known part. Find the missing part.

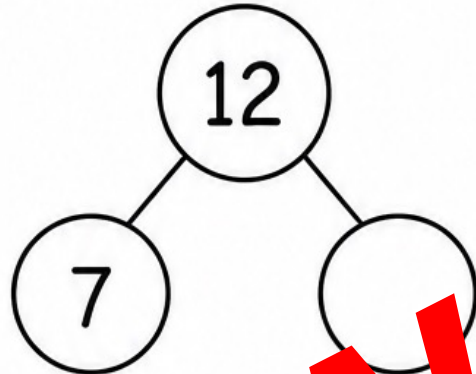
1.



$$4 + \underline{\quad} = 10$$

$$10 - 4 = \underline{\quad}$$

2.



$$7 + \underline{\quad} = 12$$

$$12 - 7 = \underline{\quad}$$

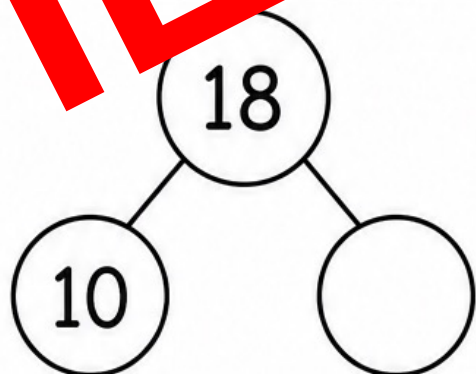
3.



$$9 + \underline{\quad} = 15$$

$$15 - 9 = \underline{\quad}$$

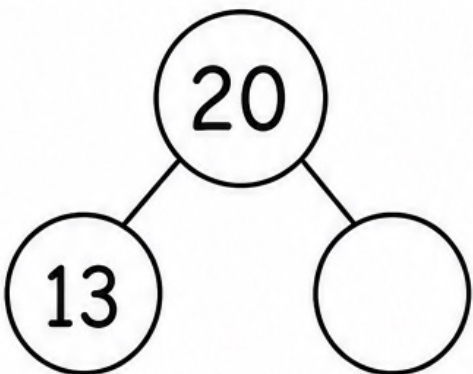
4.



$$10 + \underline{\quad} = 18$$

$$18 - 10 = \underline{\quad}$$

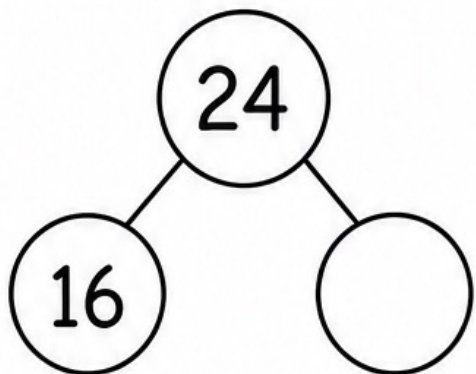
5.



$$13 + \underline{\quad} = 20$$

$$20 - 13 = \underline{\quad}$$

6.



$$16 + \underline{\quad} = 24$$

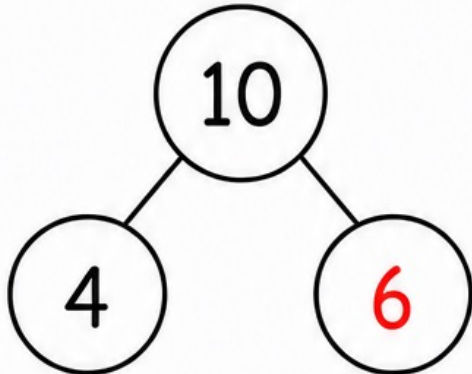
$$24 - 16 = \underline{\quad}$$

FIND THE MISSING PART • SUPPORT

Name: _____ **ANSWERS** _____ Date: _____

Use the whole and known part. Find the missing part.

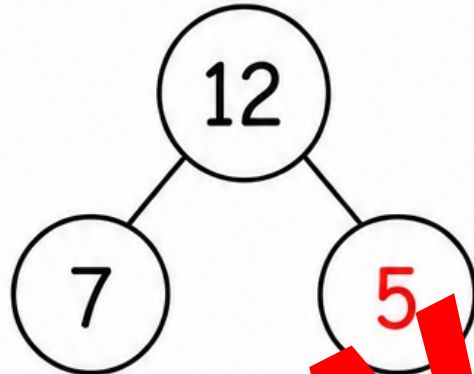
1.



$$4 + \underline{6} = 10$$

$$10 - 4 = \underline{6}$$

2.



$$7 + \underline{5} = 12$$

$$12 - 7 = \underline{5}$$

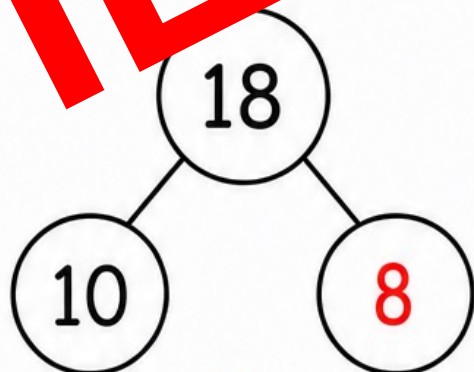
3.



$$9 + \underline{6} = 15$$

$$15 - 9 = \underline{6}$$

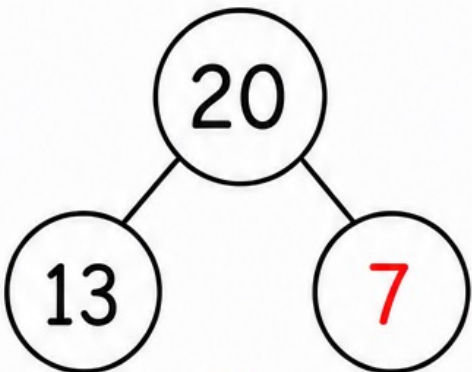
4.



$$10 + \underline{8} = 18$$

$$18 - 10 = \underline{8}$$

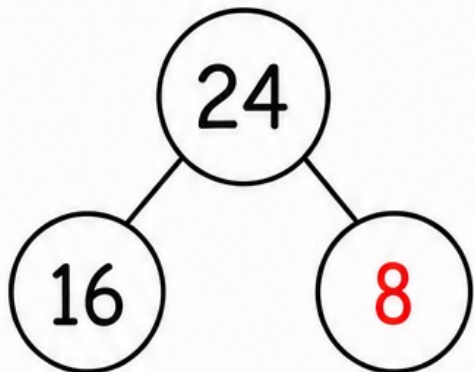
5.



$$13 + \underline{7} = 20$$

$$20 - 13 = \underline{7}$$

6.



$$16 + \underline{8} = 24$$

$$24 - 16 = \underline{8}$$

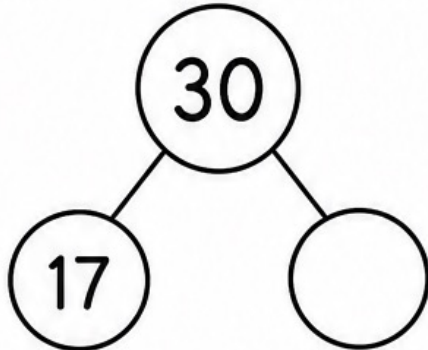
Name: _____

Date: _____

FIND THE MISSING PART • CHALLENGE

Find each missing part. Use addition or subtraction to prove it.

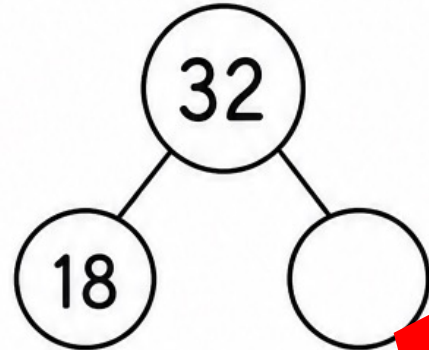
1.



$$17 + \underline{\quad} = 30$$

$$30 - 17 = \underline{\quad}$$

2.



$$18 + \underline{\quad} = 32$$

$$32 - 18 = \underline{\quad}$$

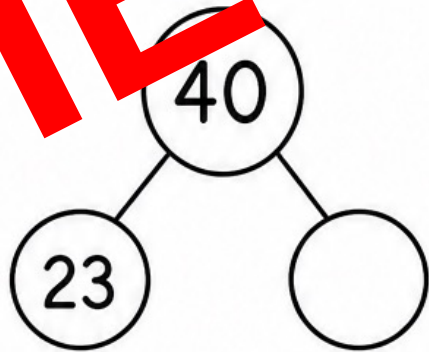
3.



$$19 + \underline{\quad} = 35$$

$$35 - 19 = \underline{\quad}$$

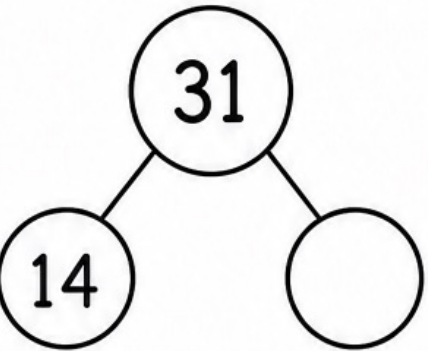
4.



$$23 + \underline{\quad} = 40$$

$$40 - 23 = \underline{\quad}$$

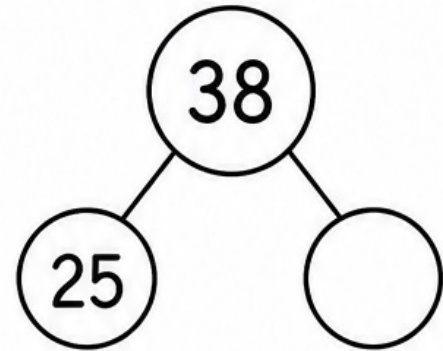
5.



$$14 + \underline{\quad} = 31$$

$$31 - 14 = \underline{\quad}$$

6.



$$25 + \underline{\quad} = 38$$

$$38 - 25 = \underline{\quad}$$

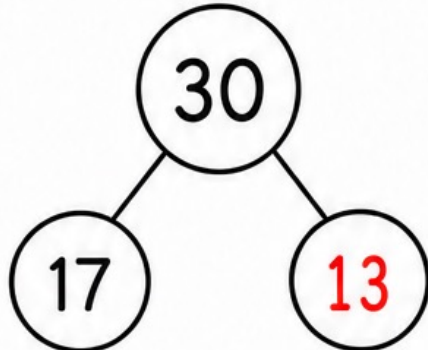
Name: ANSWERS

Date: _____

FIND THE MISSING PART • CHALLENGE

Find each missing part. Use addition or subtraction to prove it.

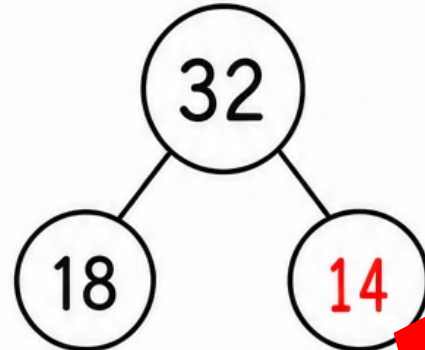
1.



$$17 + \underline{13} = 30$$

$$30 - 17 = \underline{13}$$

2.



$$18 + \underline{14} = 32$$

$$32 - 18 = \underline{14}$$

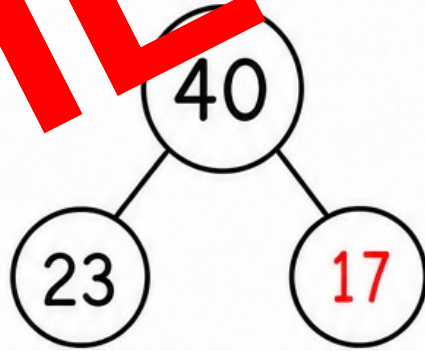
3.



$$19 + \underline{16} = 35$$

$$35 - 19 = \underline{16}$$

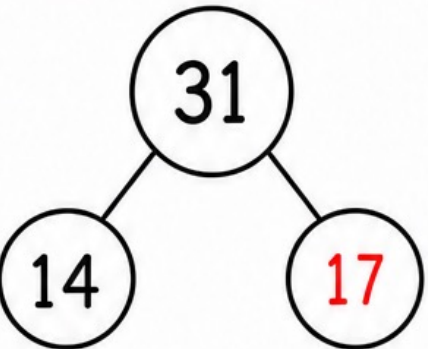
4.



$$23 + \underline{17} = 40$$

$$40 - 23 = \underline{17}$$

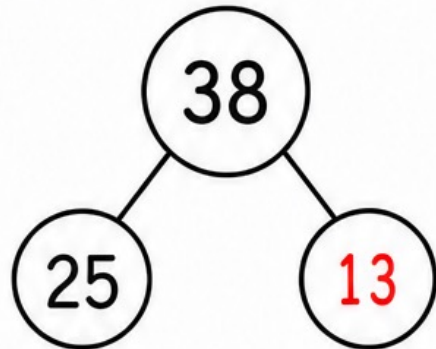
5.



$$14 + \underline{17} = 31$$

$$31 - 14 = \underline{17}$$

6.



$$25 + \underline{13} = 38$$

$$38 - 25 = \underline{13}$$

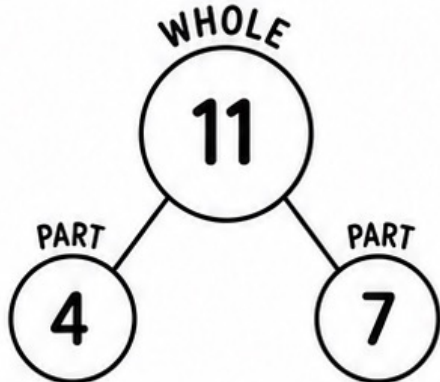
Name: _____

Date: _____

THE FACT FAMILY FOUR

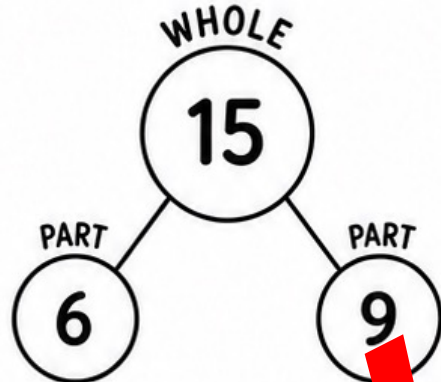
Use each model to write two addition and two subtraction facts.

1.



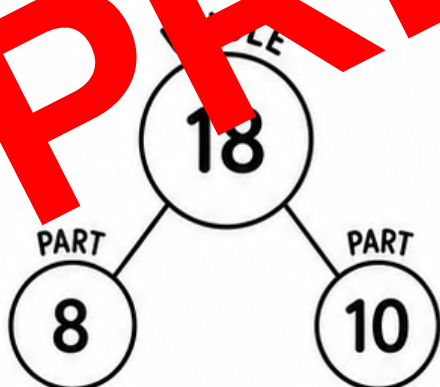
	+		=	
	+		=	
	-		=	
	-		=	

2.



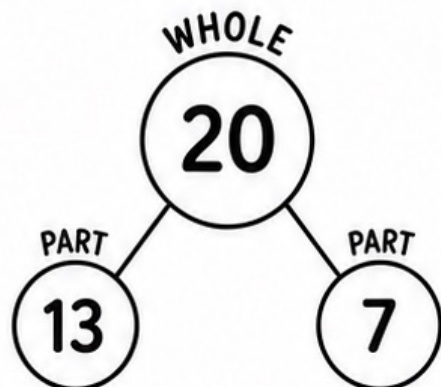
	+		=	
	+		=	
	-		=	
	-		=	

3.



	+		=	
	+		=	
	-		=	
	-		=	

4.



	+		=	
	+		=	
	-		=	
	-		=	

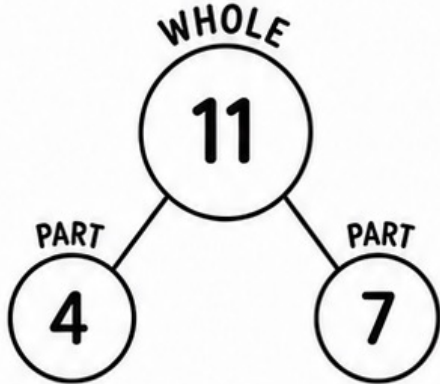
Name: ANSWERS

Date: _____

THE FACT FAMILY FOUR

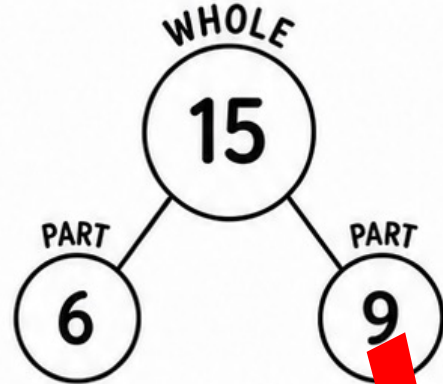
Use each model to write two addition and two subtraction facts.

1.



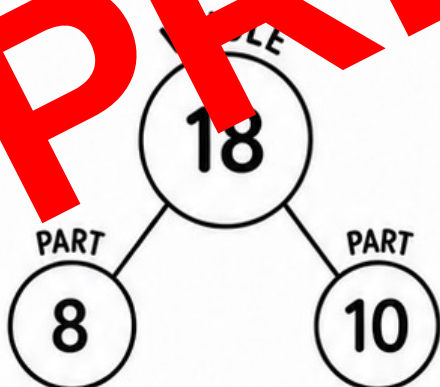
$$\begin{array}{l} 4 + 7 = 11 \\ 7 + 4 = 11 \\ 11 - 4 = 7 \\ 11 - 7 = 4 \end{array}$$

2.



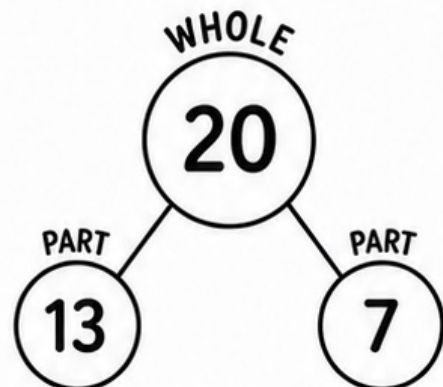
$$\begin{array}{l} 6 + 9 = 15 \\ 9 + 6 = 15 \\ 15 - 6 = 9 \\ 15 - 9 = 6 \end{array}$$

3.



$$\begin{array}{l} 8 + 10 = 18 \\ 10 + 8 = 18 \\ 18 - 8 = 10 \\ 18 - 10 = 8 \end{array}$$

4.



$$\begin{array}{l} 13 + 7 = 20 \\ 7 + 13 = 20 \\ 20 - 13 = 7 \\ 20 - 7 = 13 \end{array}$$

PARTITION IN MORE THAN ONE WAY

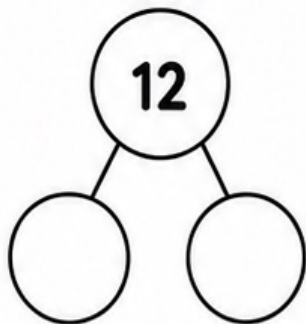
Name: _____

Date: _____

Show two different pairs of parts for each whole.

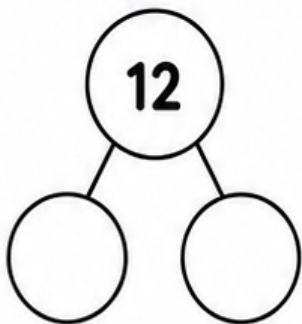
1. 12

WAY 1



___ + ___ = 12

WAY 2



___ + ___ = 12

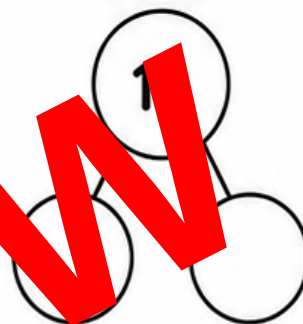
2. 16

WAY 1



___ + ___ = 16

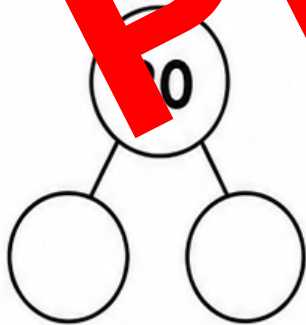
WAY 2



___ + ___ = 16

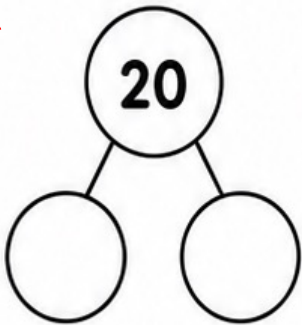
3. 20

WAY 1



___ + ___ = 20

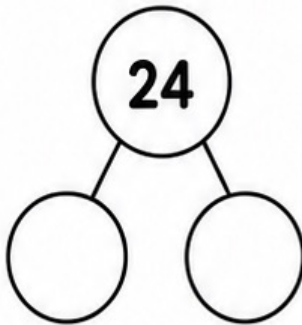
WAY 2



___ + ___ = 20

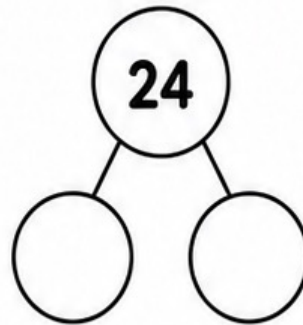
4. 24

WAY 1



___ + ___ = 24

WAY 2



___ + ___ = 24

Challenge: Can one whole have more than two partitions? Explain.

PARTITION IN MORE THAN ONE WAY

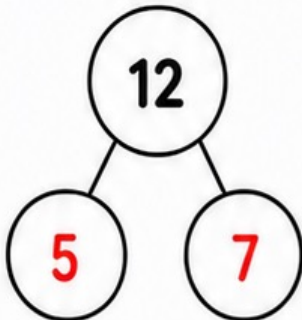
Name: ANSWERS

Date: _____

Show two different pairs of parts for each whole.

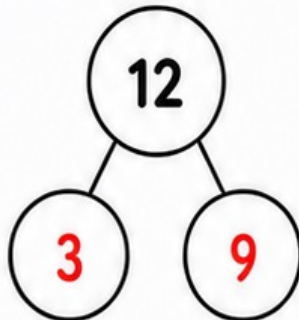
1. 12

WAY 1



$$5 + 7 = 12$$

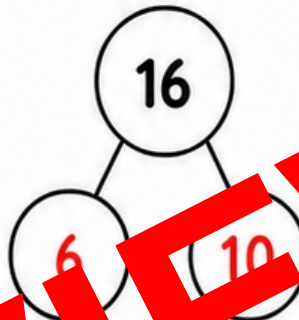
WAY 2



$$3 + 9 = 12$$

2. 16

WAY 1



$$6 + 10 = 16$$

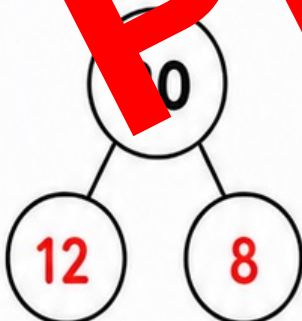
WAY 2



$$8 + 8 = 16$$

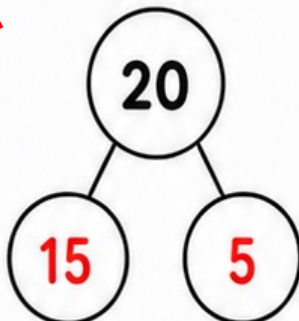
3. 20

WAY 1



$$12 + 8 = 20$$

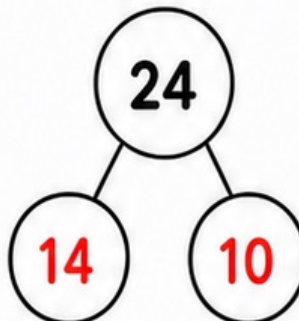
WAY 2



$$15 + 5 = 20$$

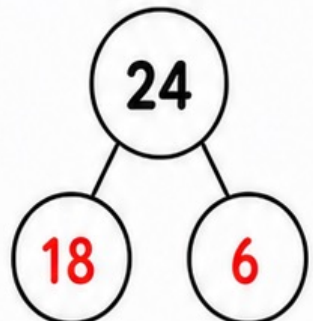
4. 24

WAY 1



$$14 + 10 = 24$$

WAY 2



$$18 + 6 = 24$$

Challenge: Can one whole have more than two partitions? Explain.

Yes. A whole can be split into many different pairs of parts.

Name: _____ Date: _____

TRUE OR FALSE? RELATED FACTS

Circle True or False. Correct each false fact.

1. $8 + 5 = 13$
 $13 - 8 = 5$

TRUE

FALSE

Correction: _____

2. $6 + 7 = 13$
 $13 - 6 = 8$

TRUE

FALSE

Correction: _____

3. $9 + 4 = 13$
 $4 + 9 = 13$

TRUE

FALSE

Correction: _____

4. $15 - 6 = 9$
 $9 + 6 = 15$

TRUE

FALSE

Correction: _____

5. $18 - 10 = 8$
 $10 + 8 = 18$

TRUE

FALSE

Correction: _____

6. $12 - 5 = 7$
 $5 + 7 = 12$

TRUE

FALSE

Correction: _____

7. $14 - 9 = 5$
 $9 + 5 = 14$

TRUE

FALSE

Correction: _____

8. $20 - 12 = 8$
 $12 + 7 = 20$

TRUE

FALSE

Correction: _____

9. $16 - 6 = 10$
 $6 + 10 = 16$

TRUE

FALSE

Correction: _____

10. $17 - 8 = 9$
 $8 + 9 = 17$

TRUE

FALSE

Correction: _____

Name: ANSWERS

Date: _____



TRUE OR FALSE? RELATED FACTS

Circle True or False. Correct each false fact.

1. $8 + 5 = 13$

$13 - 8 = 5$

TRUE ✓

FALSE

Correction: _____

2. $6 + 7 = 13$

$13 - 6 = 8$

TRUE

FALSE ✓

Correction: $13 - 6 = 7$

3. $9 + 4 = 13$

$4 + 9 = 13$

TRUE ✓

FALSE

Correction: _____

4. $15 - 6 = 9$

$9 + 6 = 15$

TRUE ✓

FALSE

Correction: _____

5. $18 - 10 = 8$

$10 + 8 = 18$

TRUE

FALSE ✓

Correction: $18 - 10 = 8$

6. $12 - 5 = 7$

$5 + 7 = 12$

TRUE ✓

FALSE

Correction: _____

7. $14 - 9 = 5$

$9 + 5 = 14$

TRUE ✓

FALSE

Correction: _____

8. $20 - 12 = 8$

$12 + 8 = 20$

TRUE

FALSE ✓

Correction: $12 + 8 = 20$

9. $16 - 6 = 10$

$6 + 10 = 16$

TRUE ✓

FALSE

Correction: _____

10. $17 - 8 = 9$

$8 + 9 = 17$

TRUE ✓

FALSE

Correction: _____

Name: _____

Date: _____



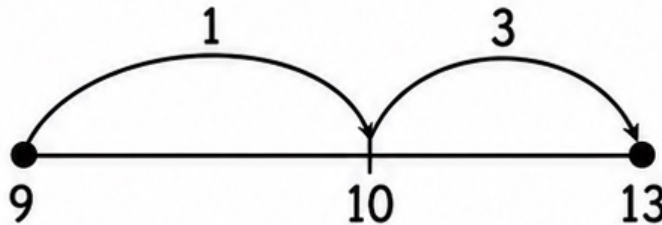
BRIDGE TO TEN



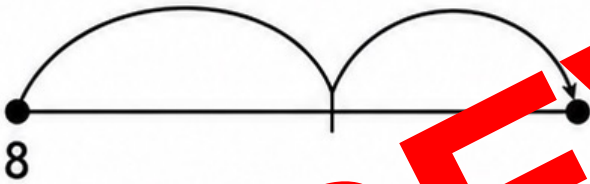
Split the second addend. First make the next ten, then add what is left.

Example

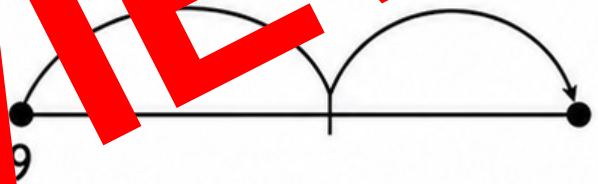
$$9 + 4 = 9 + 1 + 3 = 13$$



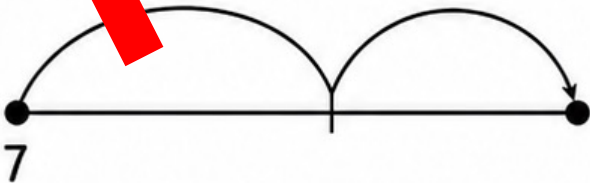
1. $8 + 5 = 8 + \underline{\quad} + \underline{\quad} = \underline{\quad}$



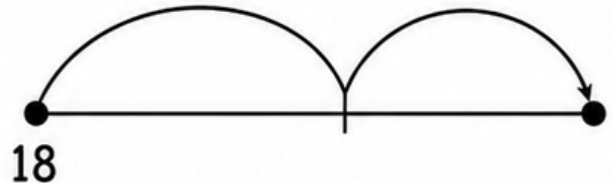
2. $9 + 6 = 9 + \underline{\quad} + \underline{\quad} = \underline{\quad}$



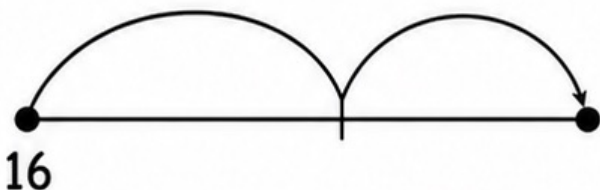
3. $7 + 8 = 7 + \underline{\quad} + \underline{\quad} = \underline{\quad}$



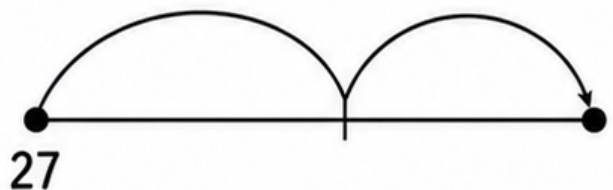
4. $18 + 7 = 18 + \underline{\quad} + \underline{\quad} = \underline{\quad}$



5. $16 + 9 = 16 + \underline{\quad} + \underline{\quad} = \underline{\quad}$



6. $27 + 8 = 27 + \underline{\quad} + \underline{\quad} = \underline{\quad}$



Name: ANSWERS

Date: _____



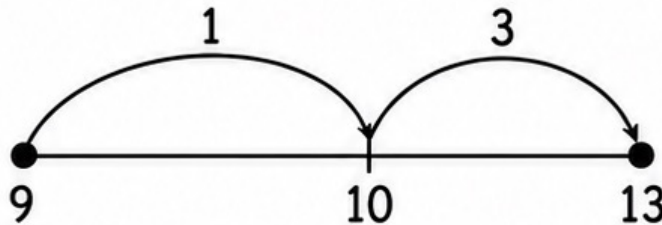
BRIDGE TO TEN



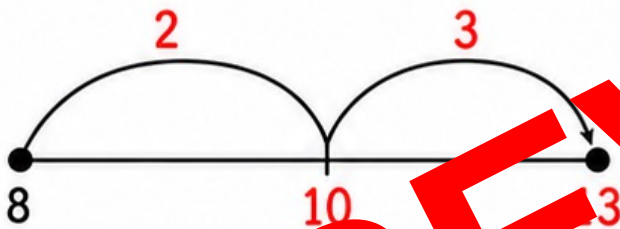
Split the second addend. First make the next ten, then add what is left.

Example

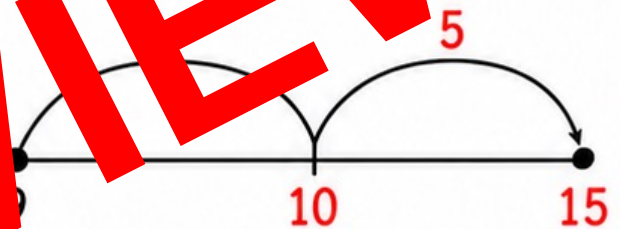
$$9 + 4 = 9 + 1 + 3 = 13$$



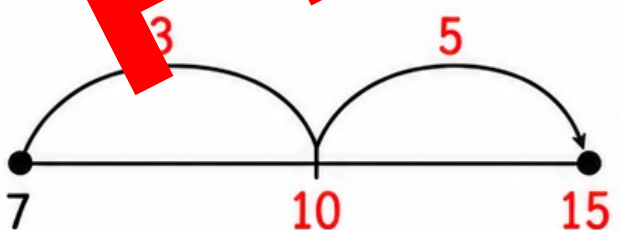
1. $8 + 5 = 8 + \underline{2} + \underline{3} = \underline{13}$



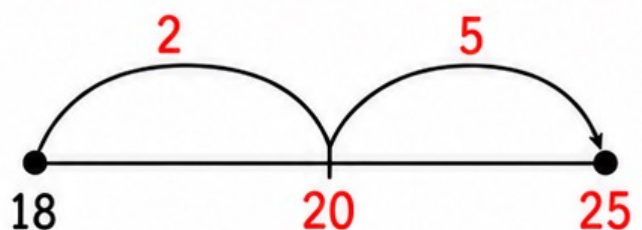
2. $9 + 6 = 9 + \underline{1} + \underline{5} = \underline{15}$



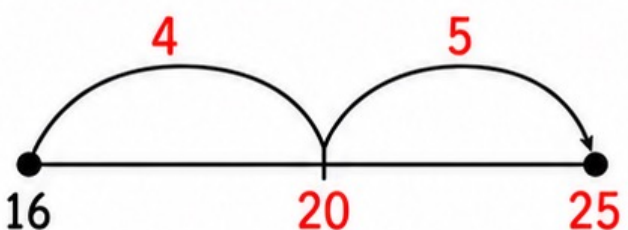
3. $7 + 8 = 7 + \underline{3} + \underline{5} = \underline{15}$



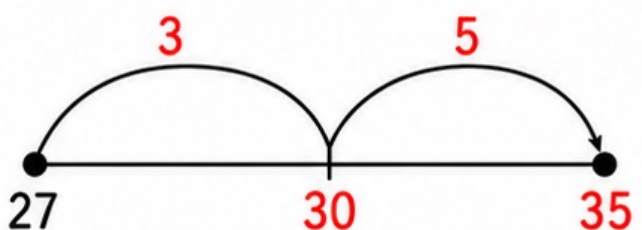
4. $18 + 7 = 18 + \underline{2} + \underline{5} = \underline{25}$



5. $16 + 9 = 16 + \underline{4} + \underline{5} = \underline{25}$



6. $27 + 8 = 27 + \underline{3} + \underline{5} = \underline{35}$



Name: _____

Date: _____

SPLIT TENS AND ONES

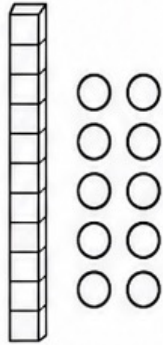
Partition each number. Add the tens, add the ones, then recombine.

1. $43 + 25$

Tens: $40 + 20 = \underline{\quad}$

Ones: $3 + 5 = \underline{\quad}$

Total: $\underline{\quad} + \underline{\quad} = \underline{\quad}$

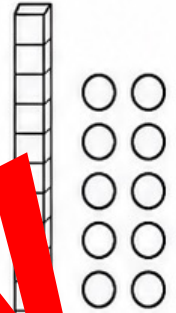


2. $36 + 42$

Tens: $30 + 40 = \underline{\quad}$

Ones: $6 + 2 = \underline{\quad}$

Total: $\underline{\quad} + \underline{\quad} = \underline{\quad}$

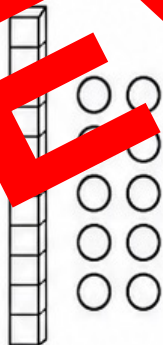


3. $52 + 17$

Tens: $50 + 10 = \underline{\quad}$

Ones: $2 + 7 = \underline{\quad}$

Total: $\underline{\quad} + \underline{\quad} = \underline{\quad}$

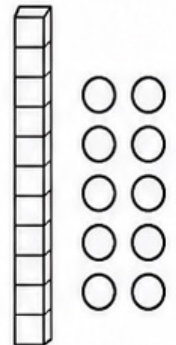


4. $64 + 23$

Tens: $60 + 20 = \underline{\quad}$

Ones: $4 + 3 = \underline{\quad}$

Total: $\underline{\quad} + \underline{\quad} = \underline{\quad}$

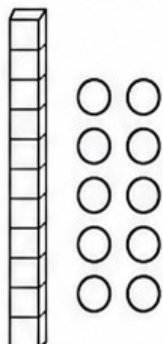


5. $71 + 18$

Tens: $70 + 10 = \underline{\quad}$

Ones: $1 + 8 = \underline{\quad}$

Total: $\underline{\quad} + \underline{\quad} = \underline{\quad}$

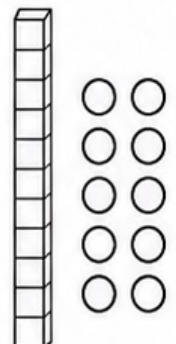


6. $45 + 34$

Tens: $40 + 30 = \underline{\quad}$

Ones: $5 + 4 = \underline{\quad}$

Total: $\underline{\quad} + \underline{\quad} = \underline{\quad}$



Name: ANSWERS

Date: _____

SPLIT TENS AND ONES

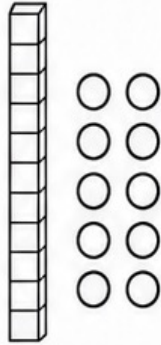
Partition each number. Add the tens, add the ones, then recombine.

1. $43 + 25$

Tens: $40 + 20 = 60$

Ones: $3 + 5 = 8$

Total: $60 + 8 = 68$

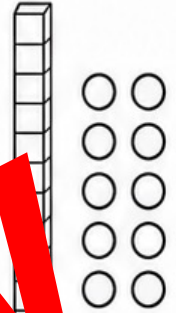


2. $36 + 42$

Tens: $30 + 40 = 70$

Ones: $6 + 2 = 8$

Total: $70 + 8 = 78$

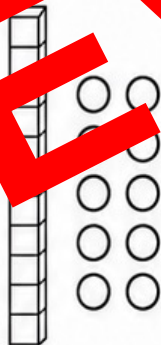


3. $52 + 17$

Tens: $50 + 10 = 60$

Ones: $2 + 7 = 9$

Total: $60 + 9 = 69$

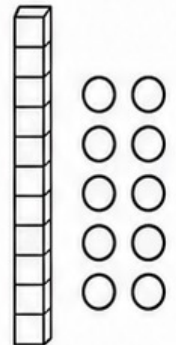


4. $64 + 23$

Tens: $60 + 20 = 80$

Ones: $4 + 3 = 7$

Total: $80 + 7 = 87$

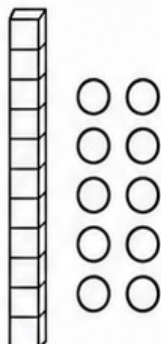


5. $71 + 18$

Tens: $70 + 10 = 80$

Ones: $1 + 8 = 9$

Total: $80 + 9 = 89$

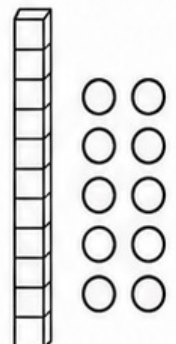


6. $45 + 34$

Tens: $40 + 30 = 70$

Ones: $5 + 4 = 9$

Total: $70 + 9 = 79$



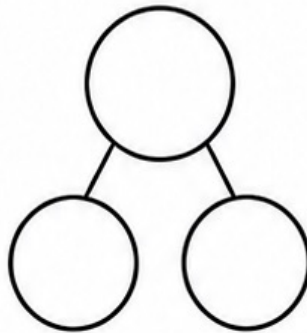
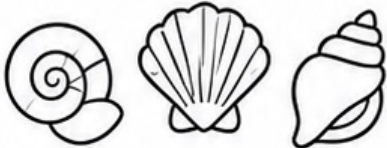
REASONING AND WORD PROBLEMS

Name: _____

Date: _____

Use a part-part-whole model, a number sentence and words to show your thinking.

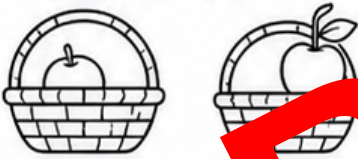
1. Maya has 18 shells.
Seven are striped.
How many are plain?



Number sentence: _____

Explain: _____

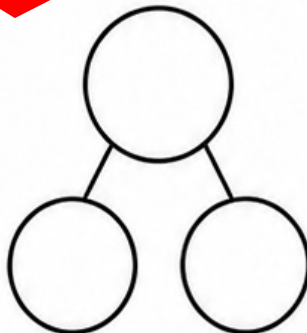
2. Two baskets hold 24 apples altogether.
One basket has 9 apples.
How many are in the other basket?



Number sentence: _____

Explain: _____

3. Liam says $5 + 6 = 14$
and $14 - 8 = 6$
are not related.
Is Liam correct?
Explain.



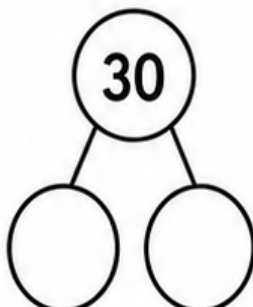
Number sentence: _____

Explain: _____

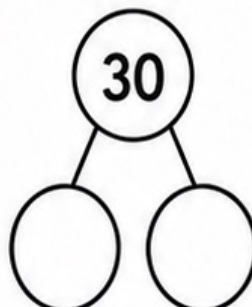
4. Show two different ways to partition 30.
How do you know the whole stays the same?



WAY 1



WAY 2



Way 1: _____

Way 2: _____

Explain: _____

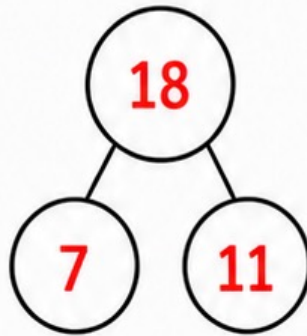
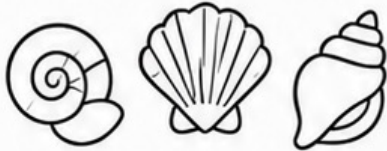
REASONING AND WORD PROBLEMS

Name: **ANSWERS**

Date: _____

Use a part-part-whole model, a number sentence and words to show your thinking.

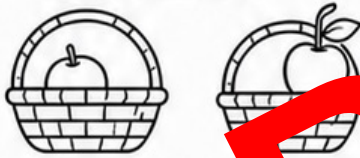
1. Maya has 18 shells.
Seven are striped.
How many are plain?



Number sentence: $18 - 7 = 11$

Explain: **11 shells are plain.**

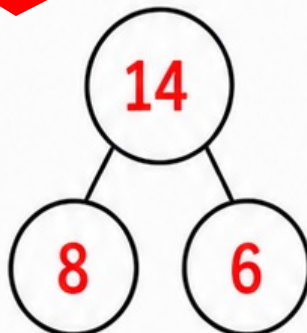
2. Two baskets hold 24 apples altogether.
One basket has 9 apples.
How many are in the other basket?



Number sentence: $24 - 9 = 15$

Explain: **There are 15 apples in the other basket.**

3. Liam says $8 + 6 = 14$
and $14 - 8 = 6$
are not related.
Is Liam correct?
Explain.



Number sentence:

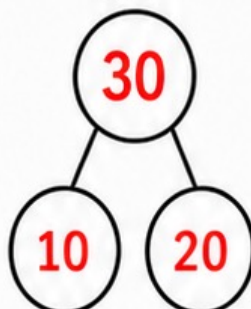
$$8 + 6 = 14 \text{ and } 14 - 8 = 6$$

Explain: **No. Both facts use the same parts 8 and 6 and the same whole 14.**

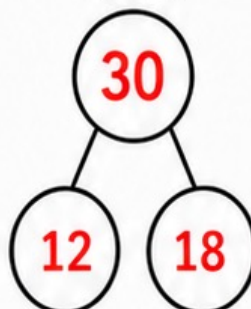
4. Show two different ways to partition 30.
How do you know the whole stays the same?



WAY 1



WAY 2



Way 1: $10 + 20 = 30$

Way 2: $12 + 18 = 30$

Explain: **Both pairs total 30, so the whole stays the same.**

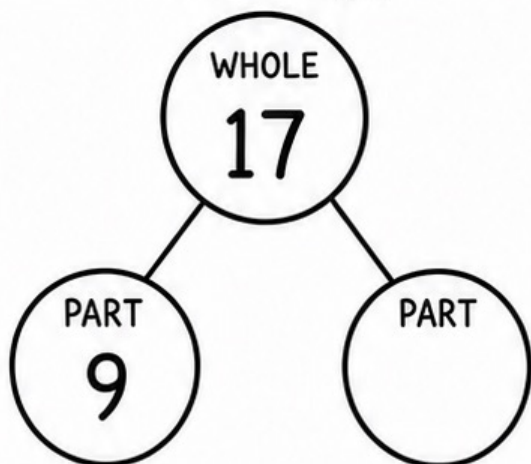
PART-PART-WHOLE CHECK • PAGE 1

Name: _____

Date: _____

Show what you know.

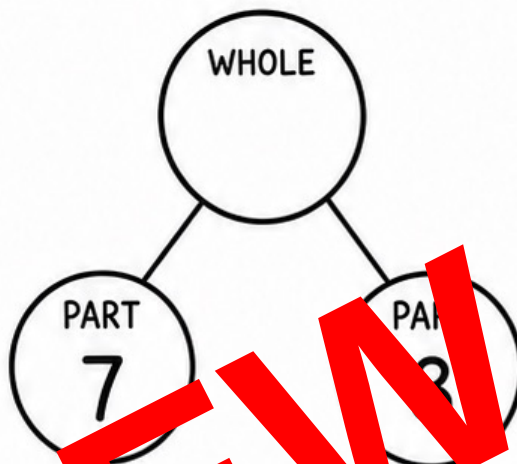
1. Find the missing part.



$$9 + \underline{\quad} = 17$$

$$17 - 9 = \underline{\quad}$$

2. Find the whole.



Whole: _____

Write two addition facts:

3. Complete the fact family.

6 10 16

☐ _____ = _____

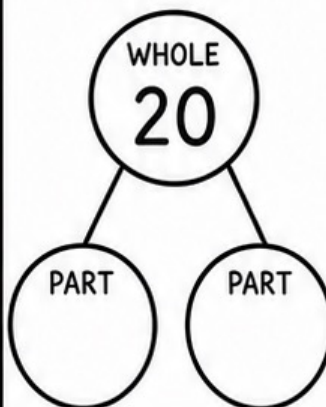
☐ _____ = _____

☐ _____ = _____

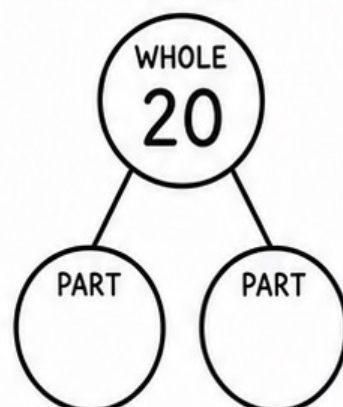
☐ _____ = _____

4. Show two different ways to partition 20.

WAY 1



WAY 2



Way 1: _____

Way 2: _____

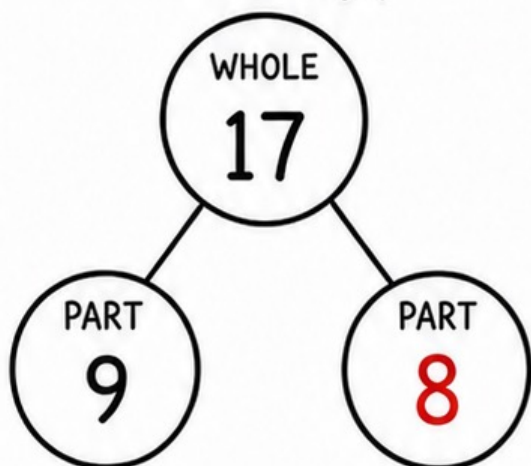
PART-PART-WHOLE CHECK • PAGE 1

Name: ANSWERS

Date: _____

Show what you know.

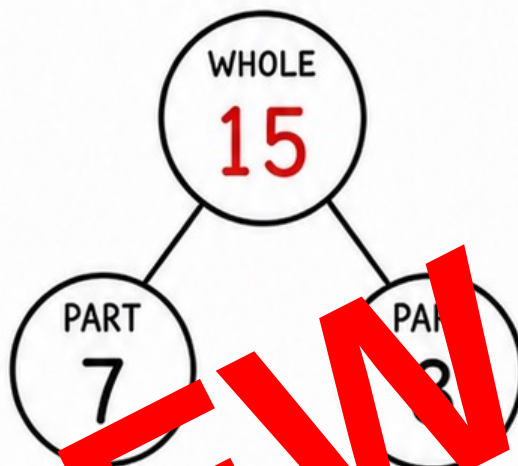
1. Find the missing part.



$$9 + \underline{8} = 17$$

$$17 - 9 = \underline{8}$$

2. Find the whole.



Whole: 15

Write two addition facts:

$$\underline{7 + 8 = 15}$$

$$\underline{8 + 7 = 15}$$

3. Complete the fact family.

6 10 16

$$\square \quad \underline{6} + \underline{10} = \underline{16}$$

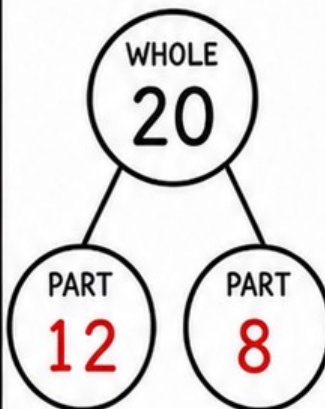
$$\square \quad \underline{10} + \underline{6} = \underline{16}$$

$$\square \quad \underline{16} - \underline{6} = \underline{10}$$

$$\square \quad \underline{16} - \underline{10} = \underline{6}$$

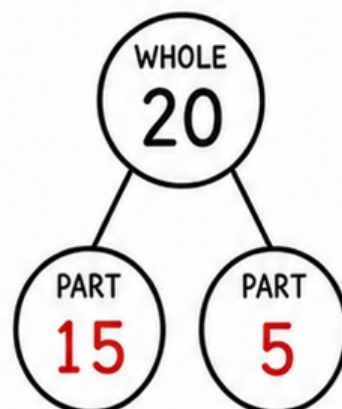
4. Show two different ways to partition 20.

WAY 1



Way 1: 12 + 8 = 20

WAY 2



Way 2: 15 + 5 = 20

PART-PART-WHOLE CHECK • PAGE 2

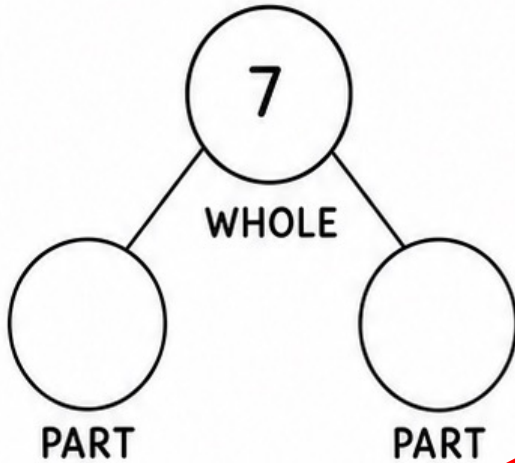
Name: _____

Date: _____

Show your strategy and explain your thinking.

5. Bridge through ten.

$$18 + 7 = 18 + \underline{\quad} + \underline{\quad} = \underline{\quad}$$



Split 7 to make the next ten.

6. Split tens and ones.

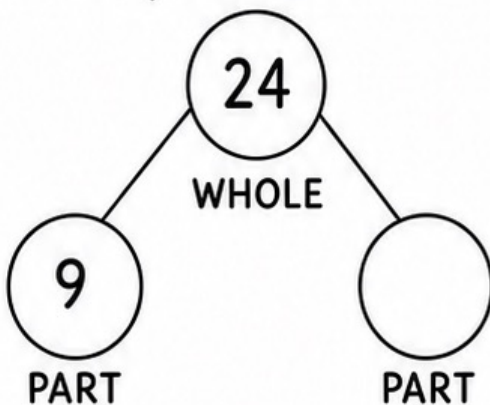
$$43 + 25 = \underline{\quad} \text{ tens} + \underline{\quad} \text{ ones} = \underline{\quad}$$

Tens thinking

Ones thinking

7. Solve the word problem.

There are 24 counters. Nine are red and the rest are blue. How many are blue?



Number sentence: _____

Answer: _____

8. Reason and explain.

Mia says $14 - 5 = 9$ is not related to $5 + 9 = 14$.

Is Mia correct?

Yes / No: _____

Explain: _____

PART-PART-WHOLE CHECK • PAGE 2

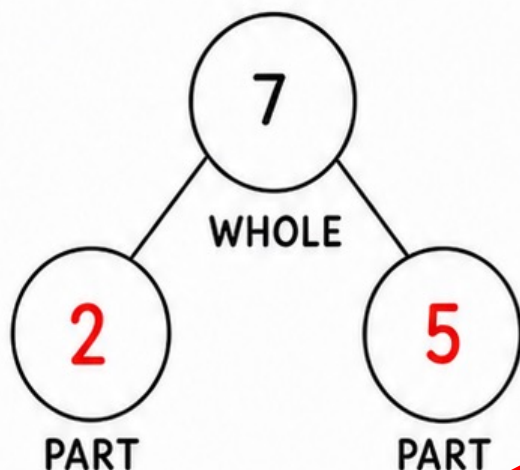
Name: ANSWERS

Date: _____

Show your strategy and explain your thinking.

5. Bridge through ten.

$$18 + 7 = 18 + \underline{2} + \underline{5} = \underline{25}$$



Split 7 to make the next ten.

6. Split tens and ones.

$$43 + 25 = \underline{6} \text{ tens} + \underline{8} \text{ ones} = \underline{68}$$

Tens thinking

$$\underline{40 + 20 = 60}$$

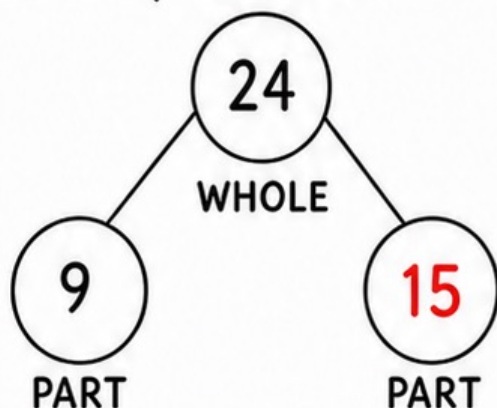
Ones thinking

$$\underline{3 + 5 = 8}$$

7. Solve the word problem.

There are 24 counters. Nine are red and the rest are blue.

How many are blue?



Number sentence: $\underline{24 - 9 = 15}$

Answer: 15 counters are blue.

8. Reason and explain.

Mia says $14 - 5 = 9$ is not related to $5 + 9 = 14$.

Is Mia correct?

Yes / No: No

Explain: They are related. Both facts use the same parts, 5 and 9, and the same whole, 14.

PART-PART-WHOLE ASSESSMENT RUBRIC

Student: _____ Date: _____

CRITERIA	1 • BEGINNING	2 • DEVELOPING	3 • ACHIEVING	4 • CONFIDENT	5 • EXCEEDING
Whole and parts	Needs help to identify.	Identifies some with support.	Identifies in familiar models.	Identifies accurately in varied models.	Explains the relationship clearly.
Missing parts	Needs help to solve.	Solves some with support.	Solves familiar examples.	Solves accurately and checks.	Uses efficient strategies and explains.
Fact families	Records few related facts.	Records some with support.	Records four facts.	Records four facts accurately.	Generalises and justifies the family.
Flexible partitions	Shows one part only.	Shows one complete partition.	Shows two partitions.	Shows several accurate partitions.	Compares partitions and notices patterns.
Mental strategies	Needs concrete support.	Uses a strategy with prompting.	Bridges an operation to split place value.	Chooses an efficient strategy.	Adapts and compares strategies.
Reasoning	Gives an answer only.	Gives a partial explanation.	Explains using a model or equation.	Justifies using model, equation and words.	Generalises and checks another way.

Overall level: 1 2 3 4 5

Teacher note: _____

Part Part Whole

Our Learning Goals

We are learning to use whole and parts to solve addition and subtraction.

I can identify the whole and both parts, write four related facts, and partition a number more than one way.



What Is a Whole?

A whole is the complete amount.

If we add 7 counters altogether, 14 is the whole.

The whole belongs in the top circle.



What Is a Part?

A part is one amount inside the whole.

A whole can be split into two parts.

Both parts join to make the whole.



Build a Model

whole

parts: 5 and 3

$$5 + 3 = 8$$

Point to the whole. Point to each part.



Parts Can Swap

$3 =$

$3 + 5$

the part changed places.

the whole stayed 8.



Subtract to Find a Part

$$8 - 5 = 3$$

$$8 - 3 = 5$$

Start with the whole. Take away one part. The other part remains.



The Fact Family Four

$$5 + 3 = 8$$

$$3 + 5 = 8$$

$$8 - 5 = 3$$

$$8 - 3 = 5$$

The model gives four related facts.



Many Ways to Make a Whole

Whole 10 can be:

1 and 9 • 2 and 8 • 3 and 7

4 and 6 • 5 and 5

Each pair still makes 10.



The Whole Stays the Same

$$10 = 2 + 8$$

$$10 = 4 + 6$$

$$10 = 7 + 3$$

The parts can change, but their total must stay 10.



Number Bonds to 20

Find the partner that makes 20

$$12 + \quad = 20$$

$$15 + 5 = 20$$

$$17 + 3 = 20$$

Use known facts to find each missing part.



Find a Missing Part

Whole is 18. One part is 7. What is the missing part?

$$7 + ? = 18$$

$$18 - 7 = ?$$

The missing part is 11.



Bridge Through Ten

$$18 +$$

Split 7 into 2 and 5.

$$18 + 2 = 20$$

$$20 + 5 = 25$$

Answer: 25



Split Tens and Ones

$$43 + 25$$

$$40 + 20 = 60$$

$$3 + 5 = 8$$

$$60 + 8 = 68$$

Answer: 68



Guided Practice

Using these with partitions

1. Write 16 as part 9 — the missing part.
2. Write the four facts for 6, 8 and 14.
3. Show two partitions of 20.



Explain and Justify

Choose one sentence starter:

I know the whole is ... because ...

These facts are related because ...

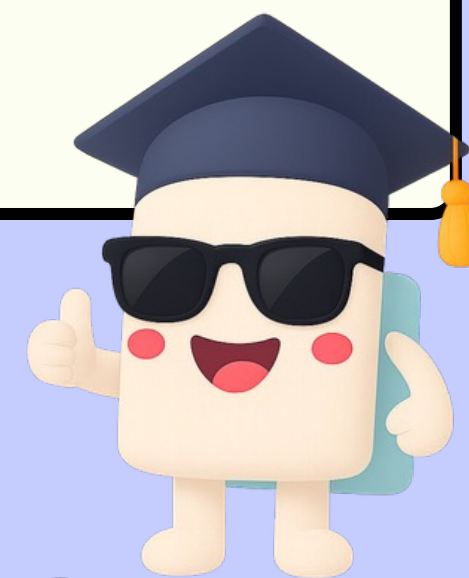
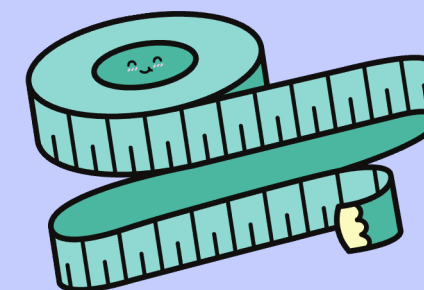
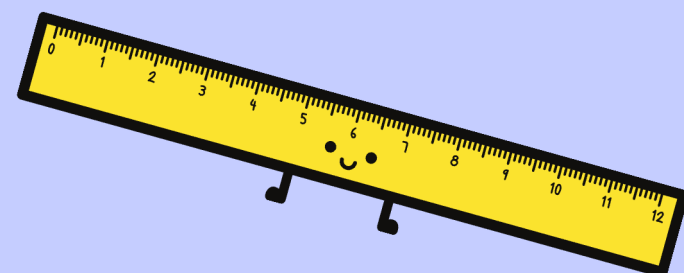
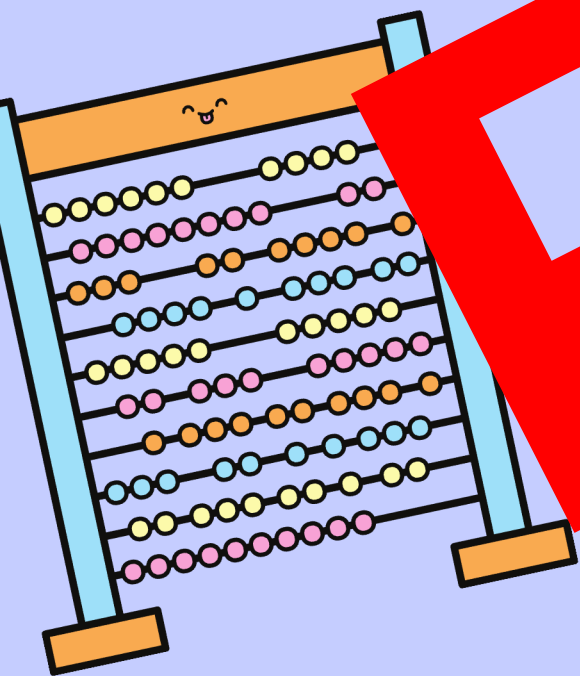
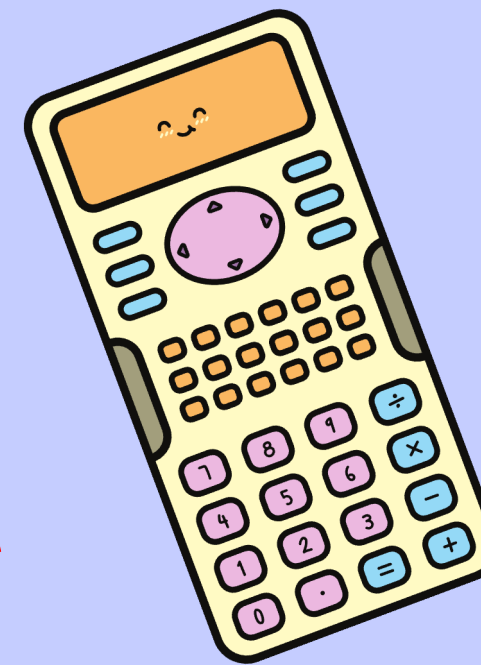
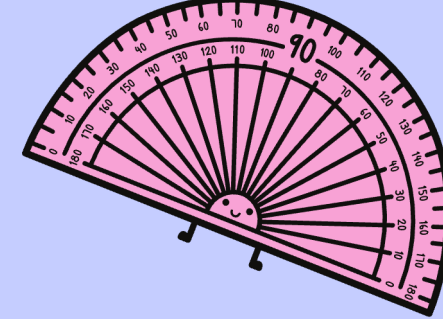
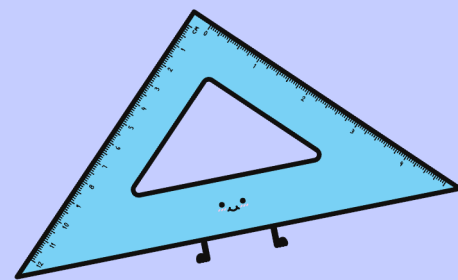
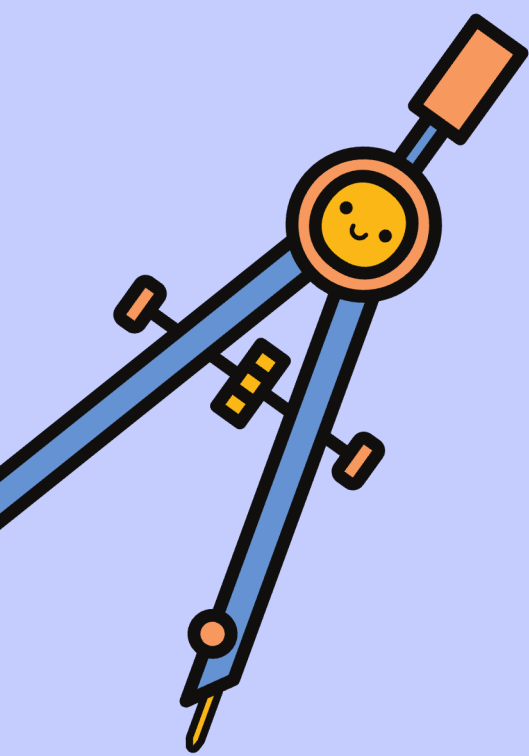
My two partitions are different, but ...



Review and Exit Check

1. What is the unknown in $9 + \square = 16$?
2. Write an related subtraction fact.
3. Show two ways to partition 12.
Explain how you know.





Well Done!

Part-Part-Whole Quiz

Question 1

The parts are 7 and 5. What is the whole?

- A.
- B. 12
- C. 35



Answer 1

Correct answer: B. 12
 $12 + 5 = 17$ so 12 is the whole.



Question 2

The parts change while the whole stays the same.

True or false?

Think of two different ways to make 10.



Answer 2

For example, $2 + 8 = 10$ and $4 + 6 = 10$.

The parts changed, but the whole stayed 10.



Question 3

The whole is 10. One part is 7.

What is the missing part?

Write one equation.



Answer 3

The missing part is 5

$$7 + 5$$

or

$$12 - 7 = 5$$



Question 4

Which model matches $9 + 6 = 15$?

A. Whole 15; parts 9 and 6

B. Whole 9; parts 15 and 6

C. Whole 6; parts 9 and 15



Answer 4

PREVIEW

Correct answer: A
The whole is 15. The two parts are 9 and 6.



Question 5

Use the numbers 10 and 18.

Write the two related addition facts.



Answer 5

$$8 + 10 = 18$$

$$10 + 8 = 18$$

Numbers can swap places.



Question 6

Which subtraction problem belongs with $7 + 11 = 18$?

A. $18 - 11$

B. $18 - 11 = 8$

C. $11 - 7 = 18$



Answer 6

PREVIEW

Correct answer: A
- 7 - 1 uses the same whole and parts.



Question 7

PREVIEW

True or False?

$6 + 9 = 15$ and $15 - 6 = 9$ are in the same fact family.



Answer 7

Both facts use the same parts, 6 and 9, and the same whole, 15.



Question 8

Use the bridge to solve $19 + 6$.

How will you split 6?

What is the total?



Answer 8

split into 10 and 5.

$$19 + 10 = 29$$

$$29 + 5 = 25$$

The total is 25.



Question 9

Use split tens and one to solve $32 + 46$.

A. 68

B. 78

C. 88



Answer q

Correct answer: B. 7

$$30 + 4 = 34$$

$$2 + 6 = 8$$

$$70 + 8 = 78$$



Question 10

Show two different partitions of 18.

Write an equation for each.

Explain why the whole stays the same.



Answer 10

Example:

$$10 + 8 = 18$$

$$11 + 7 = 18$$

Each pair totals 18, so the whole stays the same.





Well Done!