

Fact Families

$7 + 3 = 10$
 $3 + 7 = 10$
 $10 - 7 = 3$
 $10 - 3 = 7$

Use these facts for harder problems

Fact Extensions

$7 + 8 = 15$
 $70 + 80 = 150$
 $700 + 800 = 1500$

Fact Power

$7 [13] + 8 [13] = 15 [13]$
 $7 [100] + 8 [100] = 15 [100]$
 $7 [1000] + 8 [1000] = 15 [1000]$

Addition and Subtraction using Place Value

Addition

$6 + 3 = 9$
 addends sum

Clue words

- * sum * altogether *
- * in all * total *

extended form

$400 + 60 + 2$

Remember Place Value

100s 10s 1s

4 6 2

extended form

400 + 60 + 2

extended form

400 + 60 + 2

extended form

400 + 60 + 2

extended form

400 + 60 + 2

extended form

400 + 60 + 2

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extended form

400 + 60 + 2

Looks Like Subtraction

$9 - 6 = 3$
 minuend subtrahend difference

Clue Words

- * minus * take away *
- * subtract * leaves * left *
- * borrow * less * fewer *
- * remain * difference *

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Solving Real Life Problems

1. Jose has 28 marbles. He gave 6 groups of 10 to Viana and 2 groups of 10 to Perla. How many marbles does Jose have left?

2. Jacima started with 120 marbles. She gave 2 groups of 10 to Viana and 2 groups of 10 to Perla. How many marbles does she have left?

3. Karely has \$75. She bought a new chapter book set for \$16. How much money does she have left?

4. How many more marbles does Jose have than Viana and Perla?

5. How many more marbles does Jose have than Viana and Perla?

6. How many more marbles does Jose have than Viana and Perla?

7. How many more marbles does Jose have than Viana and Perla?

8. How many more marbles does Jose have than Viana and Perla?

9. How many more marbles does Jose have than Viana and Perla?

10. How many more marbles does Jose have than Viana and Perla?

11. How many more marbles does Jose have than Viana and Perla?

12. How many more marbles does Jose have than Viana and Perla?

13. How many more marbles does Jose have than Viana and Perla?

14. How many more marbles does Jose have than Viana and Perla?

15. How many more marbles does Jose have than Viana and Perla?

16. How many more marbles does Jose have than Viana and Perla?

17. How many more marbles does Jose have than Viana and Perla?

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23. How many more marbles does Jose have than Viana and Perla?

24. How many more marbles does Jose have than Viana and Perla?

25. How many more marbles does Jose have than Viana and Perla?

26. How many more marbles does Jose have than Viana and Perla?

27. How many more marbles does Jose have than Viana and Perla?

28. How many more marbles does Jose have than Viana and Perla?

29. How many more marbles does Jose have than Viana and Perla?

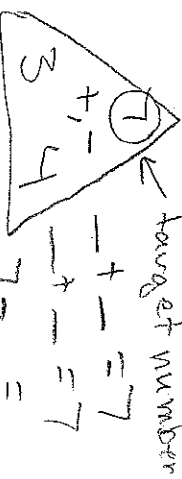
30. How many more marbles does Jose have than Viana and Perla?

31. How many more marbles does Jose have than Viana and Perla?

32. How many more marbles does Jose have than Viana and Perla?

33. How many more marbles does Jose have than Viana and Perla?

Fact Family



Use these for

word problems

Fact Extensions

$$7 + 8 = 15$$

$$70 + 80 = 150$$

$$700 + 800 = 1500$$

Addition Algorithms

Traditional Method

$$\begin{array}{r} 73 \\ + 21 \\ \hline 94 \end{array}$$

Partial Sums Method

$$\begin{array}{r} 73 \\ + 21 \\ \hline 94 \end{array}$$

Standard

Use will Quantity add and subtract numbers

up to 1000.

Use will use place value to round to the nearest 10 and 100.

Use will learn to multiply 1-digit whole numbers by multiples of 10.

Adding and Subtracting Whole Numbers Using Place Value

Remember Place Value

H	T	O
100s	10s	1s
4	6	2

Extended form

Fact Power

$$7(10) + 8(10) = 15(10)$$

$$7(100) + 8(100) = 15(100)$$

$$7(1000) + 8(1000) = 15(1000)$$

answer to addition problems

Addition Looks Like Subtraction

$$6 + 3 = 9 \quad \leftarrow \text{inverse} \quad 9 - 6 = 3$$

addends sum

Clue words

* sum * together *
* in all * add * total *

* carry *

Subtraction Algorithms

Traditional Method

$$\begin{array}{r} 24 \\ - 11 \\ \hline 13 \end{array}$$

Trade Up Method

$$76 - 23 = \square$$

$$\begin{array}{r} 76 \\ - 23 \\ \hline 53 \end{array}$$

$$\begin{array}{r} 76 \\ - 23 \\ \hline 53 \end{array}$$

Inquiry

minused subtracted difference
Clue words

* minus * take away *
* subtract * leaves *

* borrow * lose * less *
* left over * difference *
* fewer * remains *

Solving Real Life Problems

Diagram

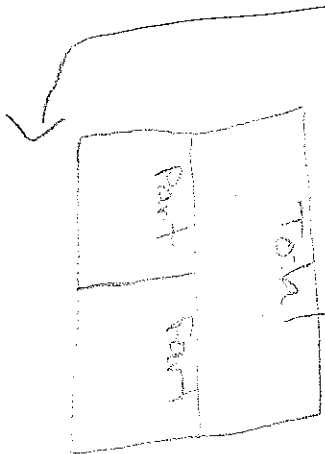
José has 28 water balloons. Carlos has 36 water balloons. How many water balloons do they have together?

Answer the question: _____

(unit)

Number Model: _____

(equation)



Jacina started with 120 marbles. She gave 2 groups of 10 to Viviana and 2 groups of 10 to Perla. How many marbles does she have left?

Quantity

Quantities

Difference

Number Model: _____

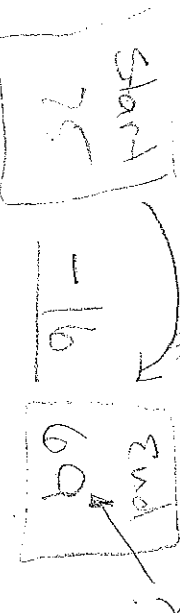
Answer: _____

(unit)

Karely has \$78. She bought a new chapter book set for \$16. How much money does she have left?

Number Model: _____

change



CCSS: use PV understanding to round whole numbers to $10/100$
 • Fluently add/subtract within 1000 & algorithms based on PV properties of operations → relative b/wn + / -

Unit 3: Applying Place Value to addition/subtraction, and Rounding

- Unit Goals:**
- Fluently add/subtract within 1000
 - use PV to round to nearest 10 & 100
 - Powers of 10 - 1-digit (10-90)

- Standards:**
- Multiply 1-digit whole numbers by multiples of 10 (10-90) using strategies based on PV

Key Concepts

- Rounding to nearest 10 & 100
 - 0, 1, 2, 3, 4 - stay the same, round down
 - 5, 6, 7, 8, 9 - round up
 - # to the 10 determines ↑ ↓
- H | T | O → use 10 add/subtract
- use base facts → $5 \times 6 = 30$
for Power of 10 $5 \times 60 = 300$

Visual Models of Concepts

$26 + 34 = \square$ H^{hundreds} | T^{tens} | O^{ones}

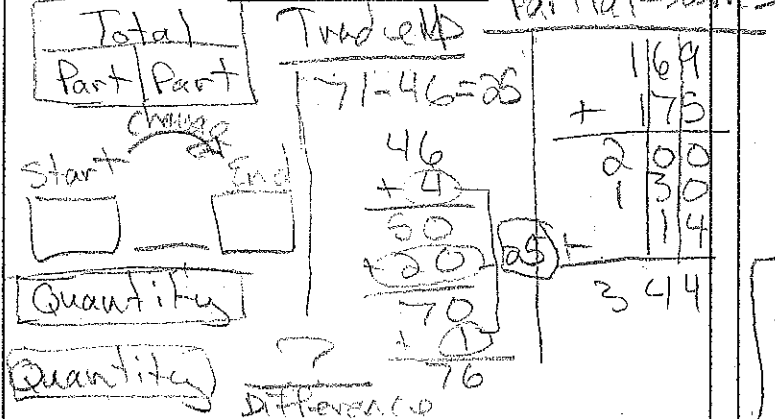
$60 = \boxed{1} + 26$ 100s | 10s | 1s

$60 - \square = 34$ 4 | 6 | 2

$60 - 34 = \square$ 400 + 60 + 2

$\square - 34 = 26$ $\square\square + 111$
 $\square\square + 111 + \square$

Algorithms/Diagrams



Connections (Real World Applications)

Using money
 Finding how much you have
 Every job uses + & -
 Basics of math

* Ask Questions
 what does _____ mean?
 How do you do the _____ method?

Language Functions/Structures

* Compare *
 the difference between _____ and _____ is _____.
 the sum of _____ and _____ is _____.

* Explaining *
 _____ is nearest to _____
 because it is only _____ numbers away.

Vocabulary

round
 sum
 difference
 inverse

addend
 method
 fact family
 diagram

algorithm
 nearer
 partial

change
 estimate
 "What's My Rule?"
 turn-around rule
 [commutative prop]

Writing

EDM

- 2.3 - explain (-) strat.
- 2.4 - "what's my Rule?"
Frames/arrows strat
- 2.7 - writing (+) # story
- 2.9 - solving +/- puzzles

Focus & Motivation

^{EDM}
30% (2.1) - Fact Family Houses

(2.9) +/- puzzles

Estimate Sums/Differences of
whole Numbers (Study Jams)

+/- w/o Regrouping (Study Jams)

10% Relate + & - (Study Jams)
(test - optional)

Games

EDM

class	online
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Roll to 100

Name that #

Number Grid Difference

Target 50

Base 10 Trading

Top-it

Number Grid

Name that Num

PIE-IT

Two-listed

Penny Addition

Number Grid

Difference

Music/chants/raps

Place Value Rap (TeacherTube)

Columns

Literature

EDM

Math-Terpieces

by Gregory Tang

The Corapes of Math

by Gregory Tang

Math Course