

## Properties of Addition

Commutative Property – You can add numbers in any order.

$$17 + 9 = 9 + 17$$

Associative Property – You can change the grouping when you add.

$$17 + (9 + 3) = (17 + 9) + 3$$

## Rounding

- Underline the place to be rounded to.
- Circle the digit one place to the right of that place.
- Is the circled number  $< 5$ ?
  - If yes, round DOWN.
  - If no, round UP.

*Example A*

6.77

6.77 is  $7 < 5$ ?

6.77

Answer: 6.8

Round Up: Increase the underlined digit by 1; all digits to the right become 0.

*Example B*

14.4

14.4 is  $4 < 5$ ?

14.4

Answer: 14.0

or 14

Round Down: The underlined digit does not change; all digits to the right become 0.

## Estimation

Estimate – To use simpler numbers to get an answer *close* to the exact answer. Estimates are used because they can be faster.

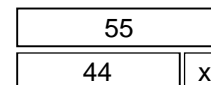
### Estimating Sums and Differences

- Round the numbers first.
- Add or subtract the rounded numbers.

Example: Exact:	191.04	Estimate: 190
	+ 48.26	+ 50
	<u>239.30</u>	<u>240</u>

## Equations

Mr. S assigned 55 problems. Micky solved 44. How many more does he need to solve?



- Draw a diagram:
- 55 is the total, 44 is the number solved, and  $x$  is a variable that represents the rest.
- Write the equation:  $44 + x = 55$  or  $55 - 44 = x$
- Now solve:  $55 - 44 = 11$ , so Micky has 11 more problems to solve.

## Adding & Subtracting Decimals

- Write the numbers vertically.
- LINE UP THE DECIMALS.
- Add or subtract normally, from the right to the left. Regroup if necessary.
- Bring the decimal straight down.
- SHOW ALL WORK.

	1	1
	452.58	
+	167.22	
	<u>619.80</u>	

Remember, whole numbers have a decimal at the end!  $16 = 16.0$

## Multiple Step Problems

- Read the problem carefully.
- Ask: *What am I asked to find?*
- Ask: What do I need to find first?
- Show work.
- Check: does my answer make sense?