



Estimating With Decimals

Lesson 1-4

Rounding

- Identify the place you are rounding to, and place a box around it.
- Check the digit to the right. If it is greater than or equal to 5, then the number in the box increases by one. If it is less than 5, then the number in the box stays the same.
- Keep everything before the box. Everything after the box becomes zero. If the zeroes come at the end of a decimal, they can be dropped.

Example: Round 4,525 to the nearest hundreds place.

$$4, \boxed{5}25 \longrightarrow 4, \boxed{5} \underline{\quad} \underline{\quad} \underline{\quad}$$

Example 2: Round 13.56 to the nearest tenths place.

$$13.\boxed{5}6 \longrightarrow 13.\boxed{6}0$$

13.6 is the answer.

Estimating the Nearest Whole Number

- Most of the time, you will be asked to round to the nearest whole number.
- Round to the ones place, and drop the decimal part of your number.

Example: Estimate the sum of 10.93 and 3.25.

$$\begin{array}{r} 10.93 \quad \longrightarrow \quad 11.00 \quad \longrightarrow \quad 11 \\ + 3.25 \quad \longrightarrow \quad 3.00 \quad \longrightarrow \quad 3 \\ \hline 14 \end{array}$$

Compatible Numbers

- Compatible numbers are numbers that are easy to compute mentally.
- Change your numbers to compatible numbers that are close to the original numbers.
- For example, instead of multiplying 5.21 by 78.03, it's easier to think about multiplying 5 times 80.
- When we estimate, we can say that the product of 5.21 and 78.03 is about 400.

Front End Estimation

- Add the “front-end” digits, ignoring the decimals.
- Estimate the decimals.
- Add the decimal estimate to the front-end sum.

Example

5.45

9.89

3.53

+ 6.03

+

About 25

Front-end: $5 + 9 + 3 + 6 = 23$

Decimals:

• .89 is close to 1.

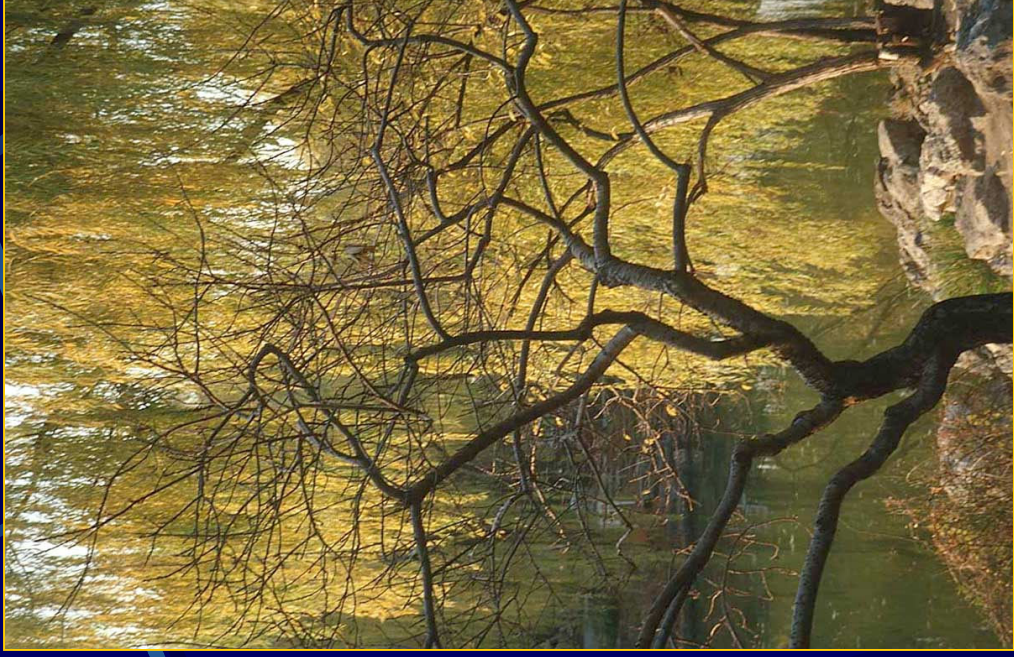
• .03 is close to 0.

• .45 + .53 is close to 1.

• $1 + 0 + 1 = 2$

Put the front-end with the decimal: $23 + 2 = 25$.

Homework Time



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