

Add or Subtract Decimals

To add or subtract decimals, follow these steps:

- > Write down the numbers, one under the other, with the decimal points lined up.
- > Put in zeros so the numbers have the same length
- > Then add or subtract, using column addition, remembering to put the decimal point in the answer lined up.

Ex) $1.789 + 1.3$

$$\begin{array}{r} 1.789 \\ + 1.300 \\ \hline 3.089 \end{array}$$

Ex) $13.45 + 0.539$

$$\begin{array}{r} 13.450 \\ + 0.539 \\ \hline 13.989 \end{array}$$

Ex) $17.2 - 6.37$

$$\begin{array}{r} 17.20 \\ - 6.37 \\ \hline 10.83 \end{array}$$

Add or Subtract

↳ the decimal (•) lines up

a) $14.63 + 0.29$

$$\begin{array}{r} 14.63 \\ + 0.29 \\ \hline 14.92 \end{array}$$

b) $45.3 - 11.46$

$$\begin{array}{r} 45.30 \\ - 11.46 \\ \hline 33.84 \end{array}$$

c) $18 + 7.2$

$$\begin{array}{r} 18.0 \\ + 7.2 \\ \hline 25.2 \end{array}$$

d) $11.6 - 5.06$

$$\begin{array}{r} 11.60 \\ - 5.06 \\ \hline 6.54 \end{array}$$

Rounding

- Identify the place you are rounding to, and place a box around it.
- Check the digit to the right. Apply basic rounding rules (5 or greater increase by 1, 4 or less stays the same)
- Keep everything before the box the same. Everything after the box becomes zero

Ex) Round $\boxed{4}.709$ to the $\boxed{\text{ones}}$ place

5

Bigger

Ex) Round $14.\boxed{3}64$ to the $\boxed{\text{tenths}}$ place

Bigger

14.4

— hundreds
— tens
— ones
●
— tenths
— hundredths
— thousandths

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.

Rounding Rules

- 5 or Bigger (as a neighbor)
↳ you round UP
- Small than 5 Keep same

Ex) Round to the hundredths

a) 14.867

 ↓
 14.87

b) 0.562

 ↓
 0.56

c) 15.931

 ↓
 15.93

d) 16.896

 ↓
 16.90

Round to the tenths

e) 7.46

 ↓
 7.5

f) 10.98

 ↓
 11.0



Shrek 2 was the highest-earning movie of 2004.

Estimate the earning for the first 2 days: (Use rounding rules)

$$\begin{array}{r} \approx 12 \\ + 9 \\ \hline 21 \text{ Million} \end{array}$$

Actual Earnings for first 2 days:

$$\begin{array}{r} 11.786 \\ + 9.159 \\ \hline 20.945 \end{array}$$

Saturday and Sunday Estimate

$$\begin{array}{r} 45 \\ + 35 \\ \hline 80 \text{ Million} \end{array}$$

All seven day Estimate

Date	Earnings (US\$ Millions)
Wed. May 19	3 11.786
Thurs. May 20	9.159
Fri. May 21	28.340
Sat. May 22	44.797
Sun. May 23	34.901
Mon. May 24	11.512
Tues. May 25	+ 8.023
	<u>148.518</u>

Actual

$$\begin{array}{r} 44.797 \\ + 34.901 \\ \hline 79.698 \end{array}$$

Actual

Discuss pages 96,97 with the students

Explore

- First 2 days
Estimate

$$\approx \begin{array}{r} 11.8 + 9 \\ 20.8 \end{array}$$

$$\approx \begin{array}{r} 12 + 9 \\ 21 \end{array}$$

Actual

$$\begin{array}{r} 11.786 \\ + 9.159 \\ \hline 20.945 \end{array}$$

Saturday and Sunday
Estimate

$$\approx \begin{array}{r} 45 + 35 \\ 80 \end{array}$$

Actual

$$\begin{array}{r} 44.797 \\ + 34.901 \\ \hline 79.698 \end{array}$$

All seven day
Estimate

$$\approx \begin{array}{r} 12 + 9 + 28 + 45 + 35 + 12 + 8 \\ 149 \end{array}$$

Actual

$$\begin{array}{r} 3 \quad 3 \quad 3 \quad 2 \\ 11.786 \\ 9.159 \\ 28.340 \\ 44.797 \\ 34.901 \\ 11.512 \\ 8.023 \\ \hline 148.518 \end{array}$$

Front-end estimation with decimals



Front End Estimation

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

A blue rectangular slide with a dark blue background and light blue geometric patterns. The title 'Front End Estimation' is in bold yellow text. Below it are three bullet points in white text, each preceded by a yellow circle.

Example

$$\begin{array}{r} 5.45 \\ 9.89 \\ 3.53 \\ + 6.03 \\ \hline \end{array}$$

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: $23 + 2 = 25$.

round to the ones

or

5

10

4

+6

\approx 25

Estimate the difference

$$12.12 - 8.56$$

Round

$$\approx \begin{array}{r} 12 \\ - 9 \\ \hline 3 \end{array}$$

Front End

$$\begin{array}{r} 12 \\ - 8 \\ \hline \approx 4 \end{array}$$

Find the actual

$$\begin{array}{r} 12.12 \\ - 8.56 \\ \hline 3.56 \end{array}$$