

Topic 4-1: Operations - Estimating Sums + Differences

• Estimate: to find an approximate answer or solution.

* Use rounding to quickly estimate sums + differences.

* Round each number to the same place value.

Hint: 5 and above give it a shove
4 and below let it go!

1. $1.\underline{7}69 + 0.\underline{6}86$ (Round to the tenths place)

$$1.8 + 0.7$$

$$\begin{array}{r} 1.8 \\ + 0.7 \\ \hline 2.5 \\ \sim \end{array}$$

* line up the decimals

* bring the decimal straight down.

2. $20.\underline{4}5 - 13.\underline{1}5$ (Round to the tenths place)

$$20.5 - 13.2$$

$$\begin{array}{r} 20.5 \\ - 13.2 \\ \hline 7.3 \\ \sim \end{array}$$

3. $\underline{1}.456 + \underline{5}.4 + \underline{14}.08$ (Round to the Nearest
whole number)

$$1 + 5 + 14$$

$$\begin{array}{r} 20 \\ \sim \end{array}$$

Topic 4-2: Evaluating Addition + Subtraction Expressions

1. $p - 1.056$ $p = 1.5$

$$\begin{array}{r} 1.500 \\ - 1.056 \\ \hline 0.444 \end{array}$$

→ (Annex or "add" zero as a place holder)
★ Line up the decimals!

2. $15 - x$ $x = 6.108$

$$\begin{array}{r} 15.000 \\ - 6.108 \\ \hline 8.892 \end{array}$$

(Add a decimal to the end of a number)

3. $10 + y$ $y = 3.284$

$$\begin{array}{r} 10.000 \\ + 3.284 \\ \hline 13.284 \end{array}$$

4. $S + 16.597$ $S = 5.78$

$$\begin{array}{r} 5.780 \\ + 16.597 \\ \hline 22.377 \end{array}$$

Topic 4-3: Solving Addition + Subtraction Equations

★ Use the inverse or "opposite" operation to isolate the variable.

$$\begin{array}{rcl} 1. & m + 5.4 & = 9.2 \\ & - 5.4 & - 5.4 \\ \hline & & 3.8 \\ & m = & \underline{3.8} \end{array}$$

$$\begin{array}{rcl} 2. & y - 6.2 & = 2.9 \\ & + 6.2 & + 6.2 \\ \hline & & 9.1 \\ & y = & \underline{9.1} \end{array}$$

$$\begin{array}{rcl} 3. & p - 37.5 & = 4.9 \\ & + 37.5 & + 37.5 \\ \hline & & 42.4 \\ & p = & \underline{42.4} \end{array}$$

Topic 4-4: Estimating Products

- Compatible numbers: numbers that are close to the actual numbers, but are easier to compute mentally.

This symbol $\approx$
means "about"

1. 42×9.25 (Round each factor)

$$\begin{array}{c} \downarrow \quad \downarrow \\ 40 \times 9 \approx \boxed{360} \end{array}$$

OR $42 \times 10 \approx \boxed{420}$ (use compatible numbers) OR

2. 7.83×3.8

$$\begin{array}{c} \downarrow \quad \downarrow \\ 8 \times 4 \approx \boxed{32} \end{array}$$

3. 44.3×6.71

$$\begin{array}{c} \downarrow \quad \downarrow \\ 40 \times 7 \approx \boxed{280} \end{array}$$

4. 6.8×53

$$\begin{array}{c} \downarrow \quad \downarrow \\ 7 \times 50 \approx \boxed{350} \end{array}$$

Topic 4-5: Multiplying Decimals

1. $\overset{1}{0}.\overset{2}{36} \rightarrow 2$ decimal places
 $\times \quad 4 \rightarrow + 0$ decimal places

$$\begin{array}{r} 1.44 \\ \hline 1.44 \end{array}$$

add 2 decimal places to your answer

2. $\overset{1}{0}.\overset{1}{3} \rightarrow 1$ decimal place
 $\times \overset{1}{0}.\overset{1}{5} \rightarrow 1$ decimal place

$$\begin{array}{r} 15 \\ + 000 \\ \hline 0.15 \end{array}$$

(2) decimal places in answer

0.15

3. $\overset{2}{48}.\overset{1}{2} \rightarrow \textcircled{1}$
 $\times \overset{1}{3}.\overset{1}{9} \rightarrow \textcircled{1}$

$$\begin{array}{r} 4338 \\ + 14460 \\ \hline 187.98 \end{array}$$

(2)

187.98

4. $\overset{3}{0}.\overset{1}{94} \rightarrow \textcircled{2}$
 $\times \quad 4 \rightarrow \textcircled{0}$

$$\begin{array}{r} 3.76 \\ \hline 3.76 \end{array}$$

(2)

3.76

Topic 4-6: Make a Table + Look for a Pattern

- Larissa swam $3\frac{1}{2}$ laps the first day. Each day after that she swam $\frac{1}{2}$ laps more than the previous day. How many laps L will Larissa swim on day 6?

Day (d)	1	2	3	4	5	6
Laps (L)	$3\frac{1}{2}$	5	$6\frac{1}{2}$	8	$9\frac{1}{2}$	11

*add $\frac{1}{2}$
each day

Larissa swam 11 laps on Day 6.

- Skyler wants to buy a pair of inline skates for \$75. She earns \$10 a week and she saves $\frac{1}{2}$ of her money each week. How many weeks, w , will Skylar need to save to buy the skates?

Number of Weeks (w)	Total Savings (S)
1	\$ 5
2	\$ 10
3	\$ 15
4	\$ 20

* $\frac{1}{2}$ of 10
is 5.

Find a pattern + extend. It will take her 15 weeks.