

## 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)

$$1.8 + 0.7$$

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

\* line up the decimals

\* bring the decimal straight down.

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

$$20.5 - 13.2$$

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

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

$$1 + 5 + 14$$

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

## Topic 4-2: Evaluating Addition + Subtraction Expressions

1.  $p - 1.056$      $p = 1.5$

$$\begin{array}{r} 1.\overset{4}{5}\overset{9}{0}\overset{10}{0} \\ - 1.056 \\ \hline 0.444 \end{array}$$

→ (Annex or "add" zero as a place holder)

★ Line up the decimals!

2.  $15 - x$      $x = 6.108$

$$\begin{array}{r} 15.\overset{14}{0}\overset{9}{0}\overset{10}{0} \\ - 6.108 \\ \hline 8.892 \end{array}$$

(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.  $s + 16.597$      $s = 5.78$

$$\begin{array}{r} 5.\overset{1}{7}\overset{1}{8}0 \\ + 16.597 \\ \hline 22.377 \end{array}$$

## Topic 4-3: Solving Addition + Subtraction Equations

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

$$\begin{array}{r} 1. \quad m + 5.4 = 9.2 \\ \quad \quad \cancel{-5.4} \quad \quad \cancel{-5.4} \\ \hline \quad \quad \quad 3.8 \\ m = 3.8 \end{array}$$

$$\begin{array}{r} 2. \quad y - 6.2 = 2.9 \\ \quad \quad \cancel{+6.2} \quad \quad \cancel{+6.2} \\ \hline \quad \quad \quad 9.1 \\ y = 9.1 \end{array}$$

$$\begin{array}{r} 3. \quad p - 37.5 = 4.9 \\ \quad \quad \cancel{+37.5} \quad \quad \cancel{+37.5} \\ \hline \quad \quad \quad 42.4 \\ p = 42.4 \end{array}$$

## 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.  $42 \times 9.25$  (Round each factor)

$$\begin{array}{ccc} \downarrow & & \downarrow \\ 40 & \times & 9 \approx \boxed{360} \end{array}$$

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

2.  $7.83 \times 3.8$

$$\begin{array}{ccc} \downarrow & & \downarrow \\ 8 & \times & 4 \approx \boxed{32} \end{array}$$

3.  $44.3 \times 6.71$

$$\begin{array}{ccc} \downarrow & & \downarrow \\ 40 & \times & 7 \approx \boxed{280} \end{array}$$

4.  $6.8 \times 53$

$$\begin{array}{ccc} \downarrow & & \downarrow \\ 7 & \times & 50 \approx \boxed{350} \end{array}$$

## Topic 4-5: Multiplying Decimals

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

$\boxed{0.15}$

3.  $\overset{2}{4}\overset{1}{8}.\overset{1}{2} \rightarrow ①$

$\times \overset{1}{3}.\overset{1}{9} \rightarrow ①$

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

(2)

$\boxed{187.98}$

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

$\times 4 \rightarrow ①$

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

(2)

$\boxed{3.76}$

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

1. 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.

2. 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 Skyler 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.