Problem Solving Workshop Strategy: Use Logical Reasoning

Problem Solving Strategy Practice

Use logical reasoning to solve.

1. Sue had softball practice for $3\frac{2}{3}$ hours. Sue's mom came $\frac{3}{4}$ hour after practice started, and left $\frac{5}{6}$ hour before practice ended. How many hours of practice did Sue's mom watch? _____

2. Mark, Dan, Brendan, and Alex sold popcorn for their baseball team. Dan sold twice as many pounds as Brendan. Alex and Mark sold the same amount. Brendan sold $12\frac{1}{2}$ pounds, 5 more pounds than Mark. How many pounds did each boy sell?
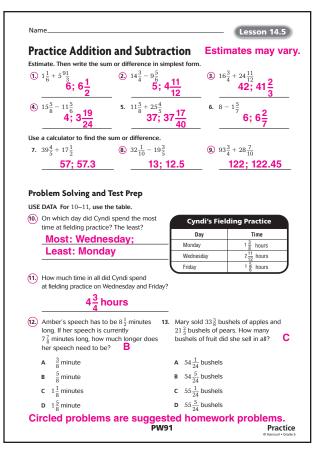
Mixed Strategy Practice

USE DATA For 3–4, use the table.

3. The sum of the distances of the 3 homeruns hit in Game 1 is $278\frac{11}{18}$ ft. What was the distance of Nina's homerun in Game 1?

_____

Homerun Distance (Ft)		
	Game 1	**Game 2**
Carla	$88\frac{2}{3}$	$90\frac{7}{9}$
Nina		$85\frac{1}{2}$
Maria	$93\frac{1}{6}$	

4. The sum of the distances of the 3 homeruns hit in Game 2 is $9\frac{1}{2}$ ft less than the sum for Game 1. What was the distance of Maria's homerun in Game 2?

_____

5. Three pumpkins weigh $18\frac{5}{9}$, $18\frac{1}{3}$, and $18\frac{5}{6}$ pounds. Tim's pumpkin weighs more than Denny's, but they weigh the same when rounded to the nearest whole number. Rich's pumpkin is lighter than Tim's. How much does each boy's pumpkin weigh?

_____

6. The mailboxes are $41\frac{1}{2}$, $40\frac{1}{4}$, and $42\frac{2}{3}$ inches tall. Jill's mailbox is $1\frac{1}{4}$ inches shorter than Ali's. Abby's mailbox is the tallest. How tall is each girl's mailbox?

_____

Practice

Practice Addition and Subtraction

Estimates may vary.

Estimate. Then write the sum or difference in simplest form.

①. $1\frac{1}{6} + 5\frac{91}{3}$
6; $6\frac{1}{2}$

②. $14\frac{3}{4} - 9\frac{5}{6}$
5; $4\frac{11}{12}$

③. $16\frac{3}{4} + 24\frac{11}{12}$
42; $41\frac{2}{3}$

④. $15\frac{5}{8} - 11\frac{5}{6}$
4; $3\frac{19}{24}$

⑤. $11\frac{5}{8} + 25\frac{4}{5}$
37; $37\frac{17}{40}$

⑥. $8 - 1\frac{5}{7}$
6; $6\frac{2}{7}$

Use a calculator to find the sum or difference.

7. $39\frac{4}{5} + 17\frac{1}{2}$
57; 57.3

⑧. $32\frac{1}{10} - 19\frac{3}{5}$
13; 12.5

⑨. $93\frac{3}{4} + 28\frac{7}{10}$
122; 122.45

Problem Solving and Test Prep

USE DATA For 10–11, use the table.

⑩. On which day did Cyndi spend the most time at fielding practice? The least?
**Most: Wednesday;
Least: Monday**

Cyndi's Fielding Practice	
Day	**Time**
Monday	$1\frac{3}{8}$ hours
Wednesday	$2\frac{11}{12}$ hours
Friday	$1\frac{5}{6}$ hours

⑪. How much time in all did Cyndi spend at fielding practice on Wednesday and Friday?
$4\frac{3}{4}$ hours

⑫. Amber's speech has to be $8\frac{1}{2}$ minutes long. If her speech is currently $7\frac{7}{8}$ minutes long, how much longer does her speech need to be? **B**

A $\frac{3}{8}$ minute

B $\frac{5}{8}$ minute

C $1\frac{1}{8}$ minutes

D $1\frac{5}{8}$ minute

13. Mary sold $33\frac{3}{8}$ bushels of apples and $21\frac{2}{3}$ bushels of pears. How many bushels of fruit did she sell in all? **C**

A $54\frac{1}{24}$ bushels

B $54\frac{5}{24}$ bushels

C $55\frac{1}{24}$ bushels

D $55\frac{5}{24}$ bushels

Circled problems are suggested homework problems.

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Problem Solving Strategy Practice

Use logical reasoning to solve.

①. Sue had softball practice for $3\frac{2}{3}$ hours. Sue's mom came $\frac{3}{4}$ hour after practice started, and left $\frac{5}{6}$ hour before practice ended. How many hours of practice did Sue's mom watch? **$2\frac{1}{12}$ hours**

②. Mark, Dan, Brendan, and Alex sold popcorn for their baseball team. Dan sold twice as many pounds as Brendan. Alex and Mark sold the same amount. Brendan sold $12\frac{1}{2}$ pounds, 5 more pounds than Mark. How many pounds did each boy sell?
**Mark: $7\frac{1}{2}$ pounds; Dan: 25 pounds; Brendan:
$12\frac{1}{2}$ pounds; Alex: $7\frac{1}{2}$ pounds**

Mixed Strategy Practice

USE DATA For 3–4, use the table.

③. The sum of the distances of the 3 homeruns hit in Game 1 is $278\frac{11}{18}$ ft. What was the distance of Nina's homerun in Game 1?
$96\frac{7}{9}$ ft

Homerun Distance (Ft)		
	Game 1	**Game 2**
Carla	$88\frac{2}{3}$	$90\frac{7}{9}$
Nina		$85\frac{1}{2}$
Maria	$93\frac{1}{6}$	

④. The sum of the distances of the 3 homeruns hit in Game 2 is $9\frac{1}{2}$ ft less than the sum for Game 1. What was the distance of Maria's homerun in Game 2?
$92\frac{5}{6}$ ft

⑤. Three pumpkins weigh $18\frac{5}{9}$, $18\frac{1}{3}$, and $18\frac{5}{6}$ pounds. Tim's pumpkin weighs more than Denny's, but they weigh the same when rounded to the nearest whole number. Rich's pumpkin is lighter than Tim's. How much does each boy's pumpkin weigh?
Tim: $18\frac{5}{6}$ pounds; Denny: $18\frac{5}{9}$ pounds; Rich: $18\frac{1}{3}$ pounds

⑥. The mailboxes are $41\frac{1}{2}$, $40\frac{1}{4}$, and $42\frac{2}{3}$ inches tall. Jill's mailbox is $1\frac{1}{4}$ inches shorter than Ali's. Abby's mailbox is the tallest. How tall is each girl's mailbox?
**Ali's mailbox: $41\frac{1}{2}$ inches tall; Jill's mailbox:
$40\frac{1}{4}$ inches tall; Abby's mailbox: $42\frac{2}{3}$**

Circled problems are suggested homework problems.

Lesson 14.5	
Item	**Suggested rationale**
1	the sum can be renamed in simplest form
2	use renaming to find the difference between 2 mixed numbers
3	find the sum of 2 mixed numbers
4	find the difference between 2 mixed numbers
8	use a calculator to subtract fractions
9	use a calculator to add fractions
10	compare 3 mixed numbers
11	find the sum of 2 mixed numbers to solve a word problem
12	find the difference of 2 mixed numbers to solve a word problem

Lesson 14.6	
Item	**Suggested rationale**
1	use logical reasoning to solve
2	use logical reasoning to solve
3	use logical reasoning to solve
4	use an equation to solve
5	make an organized list to solve
6	use logical reasoning to solve

PW91-PW92

Practice
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