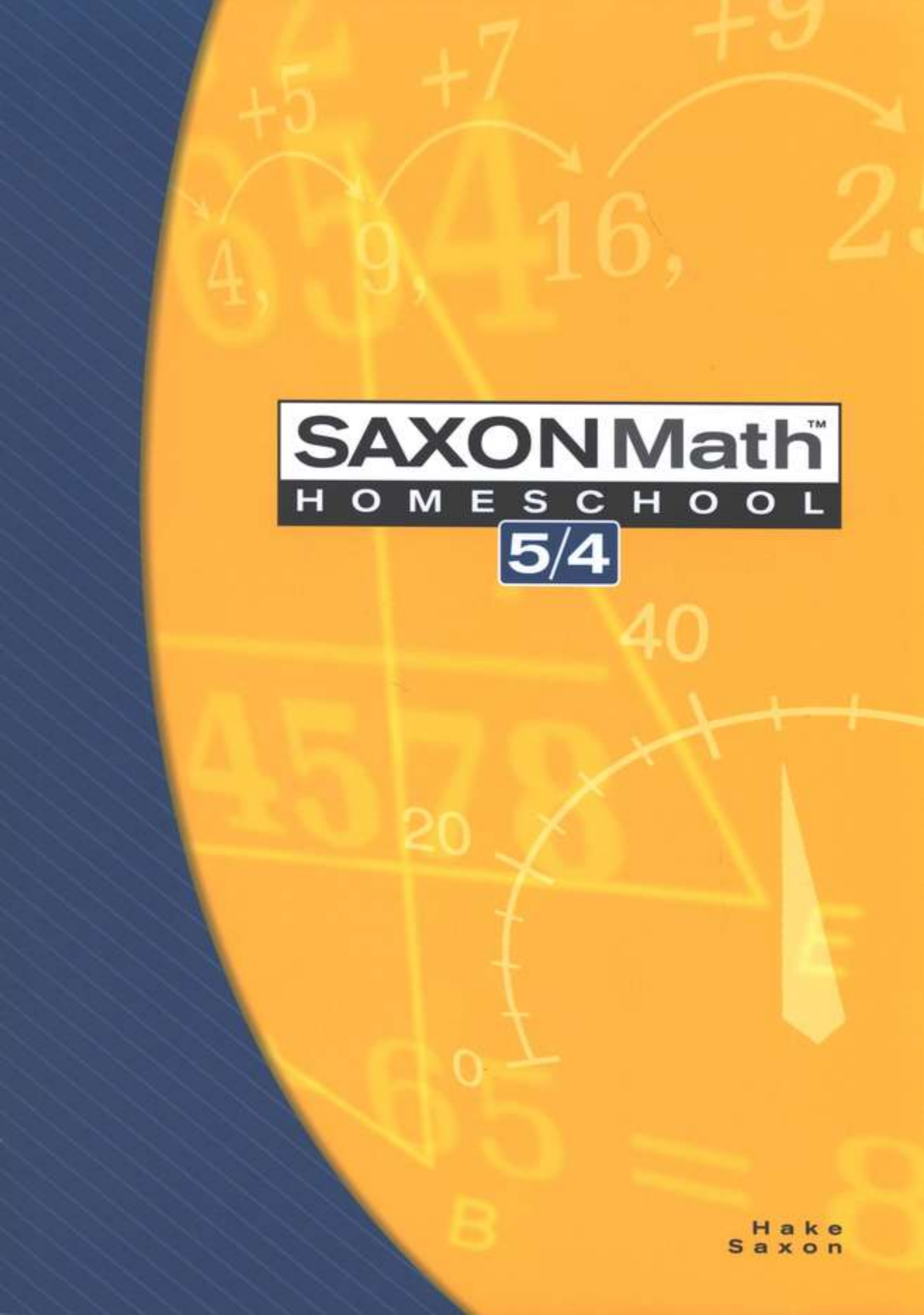
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CONTENTS

LESSON

1 Review of Addition • Addition Stories • Missing Addends, Part 1

WARM-UP

Facts Practice: 100 Addition Facts (Test A)†

Mental Math:

Add ten to a number:

a. 20 + 10	**b.** 34 + 10	**c.** 10 + 53
d. 5 + 10	**e.** 25 + 10	**f.** 10 + 8

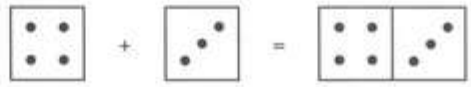
Patterns:

Count by twos from 2 through 40 as you list the numbers in a column on your paper. Study the list. Which digits appear as final digits? Which digits do not appear as final digits?

NEW CONCEPTS

Review of addition

Addition is the combining of two groups into one group. For example, when we count the dots on the top faces of a pair of dot cubes (dice), we are adding.



The numbers that are added are called **addends.** The answer is called the **sum.** The expression 4 + 3 = 7 is a **number sentence.** A number sentence is a complete sentence that uses numbers and symbols instead of words. Here we show two ways to add 4 and 3:

4	addend	3	addend
+ 3	addend	+ 4	addend
7	sum	7	sum

†For instructions on how to use the Warm-up activities, please consult the preface.

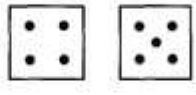
Notice that if the order of the addends is changed, the sum remains the same. This property of addition is true for any two numbers and is called the **commutative property of addition. When we add two numbers, either number may be first.**

$4 + 3 = 7$ $\qquad$ $3 + 4 = 7$

When we add zero to a number, the number is not changed. This property of addition is called the **identity property of addition.** If we start with a number and add zero, the sum is identical to the starting number.

$4 + 0 = 4 \qquad 9 + 0 = 9 \qquad 0 + 7 = 7$

Example 1 Write a number sentence for this picture:



Solution A number sentence for the picture is $\mathbf{4 + 5 = 9}$. The number sentence $\mathbf{5 + 4 = 9}$ is also correct.

When adding three numbers, the numbers may be added in any order. Here we show six ways to add 4, 3, and 5. Each way the answer is 12.

4	4	3	3	5	5
3	5	4	5	4	3
+ 5	+ 3	+ 5	+ 4	+ 3	+ 4
12	12	12	12	12	12

Example 2 Show six ways to add 1, 2, and 3.

Solution We can form two number sentences that begin with the addend 1.

$$\mathbf{1 + 2 + 3 = 6} \qquad \mathbf{1 + 3 + 2 = 6}$$

We can form two number sentences that begin with the addend 2.

$$\mathbf{2 + 1 + 3 = 6} \qquad \mathbf{2 + 3 + 1 = 6}$$

We can form two number sentences that begin with the addend 3.

$$\mathbf{3 + 1 + 2 = 6} \qquad \mathbf{3 + 2 + 1 = 6}$$

Addition stories Many word problems tell a story. Some stories are about **putting things together.** Look at this story:

John had 5 marbles. He bought 7 more marbles.
Now John has 12 marbles.

There is a pattern to this story. John had **some** marbles. Then he bought **some more** marbles. When he put the marbles together, he found the **total** number of marbles. **"Some and some more"** stories like this have an addition pattern.

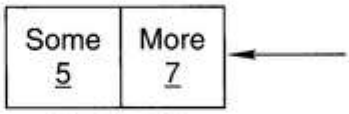
PATTERN	PROBLEM
Some	5 marbles
+ Some more	+ 7 marbles
Total	12 marbles

Here we show the pattern written sideways.

PATTERN: Some + some more = total

PROBLEM: 5 marbles + 7 marbles = 12 marbles

Here we show a diagram for the story:



Total is 12.

Example 3 Miguel saw 8 ducks. Then he saw 7 more ducks. How many ducks did Miguel see in all?

Solution This problem follows the idea of "some and some more." We show the addition pattern below.

PATTERN: Some + some more = total

PROBLEM: 8 ducks + 7 ducks = 15 ducks

We find the total number by adding 8 and 7. Miguel saw **15 ducks** in all.

Example 4 Samantha saw rabbits in the field. She saw 5 rabbits in the east field. She saw 3 rabbits in the west field. She saw 4 rabbits in the north field. How many rabbits did Samantha see in all?

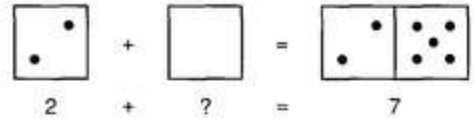
Solution In this story there are three addends.

PATTERN	PROBLEM
Some	5 rabbits
Some more	3 rabbits
+ Some more	+ 4 rabbits
Total	12 rabbits

Samantha saw **12 rabbits** in all.

Missing addends, part 1

Some of the problems in this book will have an addend missing. When one addend is missing and the sum is given, the problem is to find the missing addend. Can you figure out the missing addend in this number sentence?



Since we know that $2 + 5 = 7$, the missing addend is 5. We will often use a letter to represent a missing number, as we see in the example below.

Example 5 Find each missing addend:

(a) $\begin{array}{r} 4 \\ +\ N \\ \hline 7 \end{array}$

(b) $B + 6 = 10$

Solution (a) The letter N stands for a missing addend. Since $4 + 3 = 7$, the letter N stands for the number **3** in this number sentence.

(b) In this problem the letter B is used to stand for the missing addend. Since $4 + 6 = 10$, the letter B stands for the number **4.**

LESSON PRACTICE

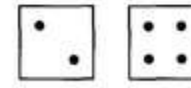
Practice set Add:

a. $5 + 6$ **b.** $6 + 5$ **c.** $8 + 0$

d. $4 + 8 + 6$ **e.** $4 + 5 + 6$

f. Diane ran 5 laps in the morning. She ran 8 laps in the afternoon. How many laps did she run in all?

g. Write two number sentences for this picture to show the commutative property:



h. Show six ways to add 1, 3, and 5.

Find each missing addend:

i. $7 + N = 10$ **j.** $A + 8 = 12$

Tests and Worksheets

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A

100 Addition Facts

For use with Lesson 1

Name _____

Time _____

Add.

4 + 4	7 + 5	0 + 1	8 + 7	3 + 4	3 + 2	8 + 3	2 + 1	5 + 6	2 + 9
0 + 9	8 + 9	7 + 6	1 + 3	6 + 8	7 + 3	1 + 6	4 + 7	0 + 3	6 + 4
9 + 3	2 + 6	3 + 0	6 + 1	3 + 6	4 + 0	5 + 7	1 + 1	5 + 4	2 + 8
4 + 3	9 + 9	0 + 7	9 + 4	7 + 7	8 + 6	0 + 4	5 + 8	7 + 4	1 + 7
9 + 5	1 + 5	9 + 0	3 + 8	1 + 9	9 + 1	8 + 8	2 + 2	4 + 5	6 + 2
7 + 9	1 + 2	6 + 7	0 + 8	9 + 2	4 + 8	8 + 0	3 + 9	1 + 0	6 + 3
2 + 0	8 + 4	3 + 5	9 + 8	5 + 0	5 + 5	3 + 1	7 + 2	8 + 5	2 + 5
5 + 2	0 + 5	6 + 9	1 + 8	9 + 6	7 + 1	4 + 6	0 + 2	6 + 5	4 + 9
1 + 4	3 + 7	7 + 0	2 + 3	5 + 1	6 + 6	4 + 1	8 + 2	2 + 4	6 + 0
5 + 3	4 + 2	9 + 7	0 + 6	7 + 8	0 + 0	5 + 9	3 + 3	8 + 1	2 + 7

2

One-Dollar Bills

For use with Lesson 4

E

Multiplication Facts: 2's, 5's, 9's, Squares

For use with Lesson 39

Name _____

Time _____

Multiply.

9 × 9	2 × 6	3 × 5	2 × 2	8 × 2	7 × 9	2 × 3	5 × 6
4 × 5	0 × 9	9 × 8	5 × 2	6 × 9	7 × 5	9 × 3	0 × 5
6 × 6	5 × 9	5 × 8	9 × 7	2 × 0	8 × 8	7 × 2	5 × 5
4 × 2	1 × 9	3 × 3	2 × 8	4 × 9	3 × 2	8 × 9	5 × 7
2 × 1	2 × 9	7 × 7	9 × 6	5 × 0	4 × 4	9 × 1	2 × 5
1 × 5	9 × 5	2 × 7	5 × 4	9 × 2	5 × 3	0 × 2	8 × 5
3 × 9	2 × 4	6 × 5	1 × 2	9 × 0	6 × 2	9 × 4	5 × 1

TEST 4

Also take Facts Practice Test B (100 Subtraction Facts).

Name _____

1. (11) On the first night Tibor observed forty-seven pulsars. On the second night he observed some more pulsars. If Tibor observed ninety-eight pulsars in the two nights, how many did he observe on the second night?

2. (1) Four hundred cardinals flew south on Friday. Two hundred cardinals flew south on Saturday. Fifty cardinals flew south on Sunday. How many cardinals flew south in the three days?

3. (13) Kayla had $359. When Desiree landed on Kayla's property, Desiree had to pay Kayla $241. Then how much money did Kayla have?

4. (16) Write 607 in expanded form.

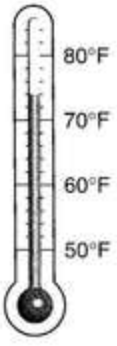
Compare:

5. (Inv. 1) five hundred six ◯ five hundred sixteen

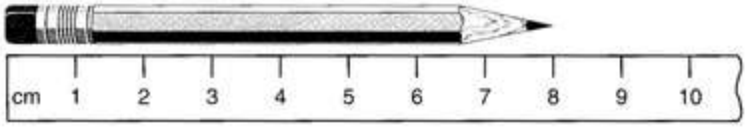
6. (Inv. 1) 313 ◯ 285

7. (19) If it is morning, what time is shown by this clock?

8. (18) What temperature is shown on this thermometer?



9. (Inv. 2) How long is this pencil?



10. (20) Round 88 to the nearest ten.

11. (20) Round $6.38 to the nearest dollar.

12. (5) Feynman is standing sixth in line. Dirac is thirteenth in the same line. How many people are between Feynman and Dirac?

13. (17)
$$\begin{array}{r} 31 \\ 46 \\ 12 \\ +\ 57 \\ \hline \end{array}$$

14. (13)
$$\begin{array}{r} 592 \\ +\ 336 \\ \hline \end{array}$$

15. (15)
$$\begin{array}{r} \$81 \\ -\ \$53 \\ \hline \end{array}$$

Find each missing number:

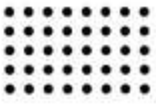
16. (16)
$$\begin{array}{r} C \\ -\ 24 \\ \hline 63 \end{array}$$

17. (14)
$$\begin{array}{r} 32 \\ +\ D \\ \hline 58 \end{array}$$

18. (16)
$$\begin{array}{r} 54 \\ -\ F \\ \hline 31 \end{array}$$

19. (2) $3 + 43 + 25 + 10 + G = 100$

20. (3) How many dots are in this pattern? Count by fives.



Solutions Manual

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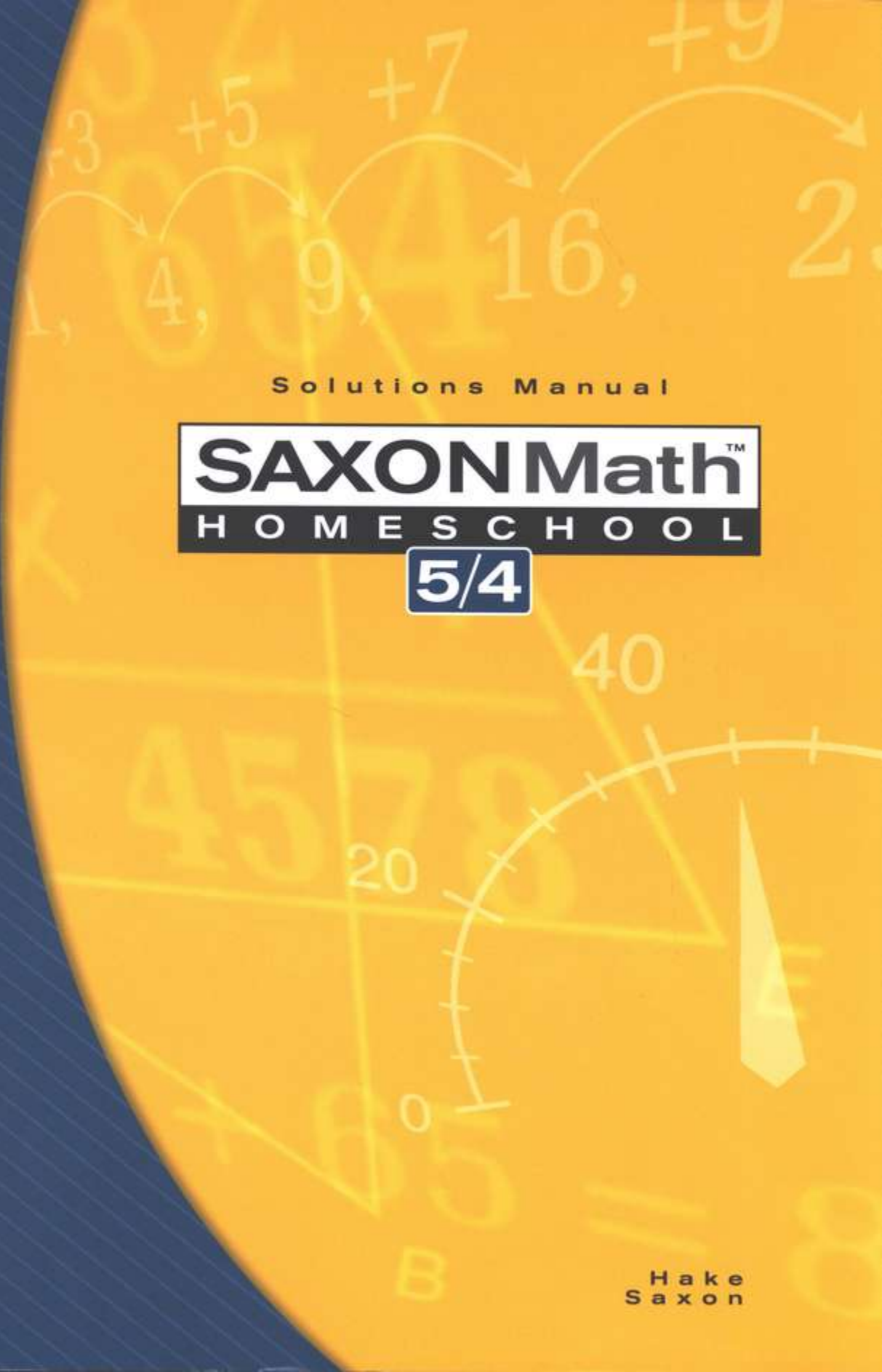

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Stephen Hake
John Saxon

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Lesson 1, Warm-Up

a. **30**

b. **44**

c. **63**

d. **15**

e. **35**

f. **18**

Patterns

Final digits: **0, 2, 4, 6, 8**
Not final digits: **1, 3, 5, 7, 9**

Lesson 1, Lesson Practice

a. $5 + 6 = \mathbf{11}$

b. $6 + 5 = \mathbf{11}$

c. $8 + 0 = \mathbf{8}$

d. $4 + 8 + 6 = \mathbf{18}$

e. $4 + 5 + 6 = \mathbf{15}$

f. Pattern: Some + some more = total
Problem: 5 laps + 8 laps = **13 laps**

g. **2 + 4 = 6**
4 + 2 = 6

h. **1 + 3 + 5 = 9,**
1 + 5 + 3 = 9,
3 + 1 + 5 = 9,
3 + 5 + 1 = 9,
5 + 1 + 3 = 9,
5 + 3 + 1 = 9

i. Since $7 + 3 = 10$, $N = \mathbf{3}$

j. Since $4 + 8 = 12$, $A = \mathbf{4}$

Lesson 1, Mixed Practice

1. Pattern:
$$\begin{array}{r} \text{Some} \\ +\ \text{Some more} \\ \hline \text{Total} \end{array}$$

Problem:
$$\begin{array}{r} 5 \text{ singers} \\ +\ 7 \text{ singers} \\ \hline \textbf{12 singers} \end{array}$$

2. Pattern: Some + some more = total
Problem: 6 coins + 3 coins = **9 coins**

3. $9 + 4 = \mathbf{13}$

4. $8 + 2 = \mathbf{10}$

5. $$\begin{array}{r} 4 \\ +\ 5 \\ \hline 9 \end{array}$$
$N = \mathbf{5}$

6. $$\begin{array}{r} 3 \\ +\ 5 \\ \hline 8 \end{array}$$
$W = \mathbf{3}$

7. $$\begin{array}{r} 6 \\ +\ 2 \\ \hline 8 \end{array}$$
$P = \mathbf{2}$

8. $$\begin{array}{r} 0 \\ +\ 8 \\ \hline 8 \end{array}$$
$Q = \mathbf{0}$

9. $3 + 4 + 5 = \mathbf{12}$

10. $4 + 4 + 4 = \mathbf{12}$

11. $6 + 4 = 10$
$R = \mathbf{4}$

12. $1 + 5 = 6$
$X = \mathbf{1}$

13. $$\begin{array}{r} 5 \\ 5 \\ +\ 5 \\ \hline 15 \end{array}$$

14.
$$\begin{array}{r} 8 \\ 0 \\ +\ 7 \\ \hline 15 \end{array}$$

15.
$$\begin{array}{r} 6 \\ 5 \\ +\ 4 \\ \hline 15 \end{array}$$

16.
$$\begin{array}{r} 9 \\ 9 \\ +\ 9 \\ \hline 27 \end{array}$$

17.
$$\begin{array}{r} 1 \\ +\ 9 \\ \hline 10 \end{array}$$
$M = \mathbf{1}$

18.
$$\begin{array}{r} 9 \\ +\ 3 \\ \hline 12 \end{array}$$
$F = \mathbf{3}$

19.
$$\begin{array}{r} 5 \\ +\ 5 \\ \hline 10 \end{array}$$
$Z = \mathbf{5}$

20.
$$\begin{array}{r} 0 \\ +\ 3 \\ \hline 3 \end{array}$$
$N = \mathbf{3}$

21. $3 + 2 + 5 + 4 + 6 = \mathbf{20}$

22. $2 + 2 + 2 + 2 + 2 + 2 + 2 = \mathbf{14}$

23. $\mathbf{6 + 3 = 9}$ or $\mathbf{3 + 6 = 9}$

24. **One possibility: $4 + 5 + 2 = 11$**

25. $\mathbf{2 + 3 + 4 = 9}$,
$\mathbf{2 + 4 + 3 = 9}$,
$\mathbf{3 + 2 + 4 = 9}$,
$\mathbf{3 + 4 + 2 = 9}$,
$\mathbf{4 + 2 + 3 = 9}$,
$\mathbf{4 + 3 + 2 = 9}$

26. **B. 7**

Lesson 2, Warm-Up

a. **50**

b. **36**

c. **49**

d. **17**

e. **19**

f. **73**

Patterns

Final digits: **0, 5**
Numbers in both lists: **10, 20, 30, 40, 50, 60, 70, 80, 90, 100**

Lesson 2, Lesson Practice

a. $10 + A = 17$
$10 + 7 = 17$
$A = \mathbf{7}$

b. $B + 11 = 12$
$1 + 11 = 12$
$B = \mathbf{1}$

c. $14 + C = 20$
$14 + 6 = 20$
$C = \mathbf{6}$

Lesson 2, Mixed Practice

1. Pattern: Some + some more = total
Problem: 5 carrots + 6 carrots = **11 carrots**

2. Pattern: Some + some more = total
Problem: 7 miles + 4 miles = **11 miles**

3. $9 + 4 = 13$
$N = \mathbf{4}$

4. $7 + 8 = \mathbf{15}$