

## CONTENTS

Letter from Author Stephen Hake	xi
Preface	xiii
List of Materials	xxi
<b>LESSON 1</b> Sequences • Digits	1
<b>LESSON 2</b> Even and Odd Numbers	4
<b>LESSON 3</b> Using Money to Illustrate Place Value	8
<b>LESSON 4</b> Comparing Whole Numbers	12
<b>LESSON 5</b> Naming Whole Numbers Through Hundreds • Dollars and Cents	16
<b>LESSON 6</b> Adding One-Digit Numbers • Using the Addition Algorithm	20
<b>LESSON 7</b> Writing and Comparing Numbers Through Hundred Thousands • Ordinal Numbers	25
<b>LESSON 8</b> Subtraction Facts • Fact Families	30
<b>LESSON 9</b> Practicing the Subtraction Algorithm	34
<b>LESSON 10</b> Missing Addends	39
<b>INVESTIGATION 1</b> Story Problems	43
<b>LESSON 11</b> Story Problems About Combining	46
<b>LESSON 12</b> Lines • Number Lines • Tally Marks	52
<b>LESSON 13</b> Multiplication as Repeated Addition • Adding and Subtracting Dollars and Cents	58
<b>LESSON 14</b> Missing Numbers in Subtraction	62
<b>LESSON 15</b> Making a Multiplication Table	67
<b>LESSON 16</b> Story Problems About Separating	72
<b>LESSON 17</b> Multiplying by One-Digit Numbers	77
<b>LESSON 18</b> Multiplying Three Factors • Missing Numbers in Multiplication	82
<b>LESSON 19</b> Division Facts	87
<b>LESSON 20</b> Three Ways to Show Division	91

<b>INVESTIGATION 2</b>	Fractions: Halves, Fourths, and Tenths	<b>96</b>
<b>LESSON 21</b>	Problems About Equal Groups	<b>101</b>
<b>LESSON 22</b>	One-Digit Division with a Remainder • Divisibility by 2, 5, and 10	<b>106</b>
<b>LESSON 23</b>	Recognizing Halves	<b>111</b>
<b>LESSON 24</b>	Parentheses • Associative Property	<b>115</b>
<b>LESSON 25</b>	Listing the Factors of Whole Numbers	<b>119</b>
<b>LESSON 26</b>	Division Algorithm	<b>123</b>
<b>LESSON 27</b>	Reading Scales	<b>128</b>
<b>LESSON 28</b>	Measuring Time	<b>132</b>
<b>LESSON 29</b>	Multiplying by Multiples of 10 and 100	<b>137</b>
<b>LESSON 30</b>	Interpreting Pictures of Fractions and Percents	<b>142</b>
<b>INVESTIGATION 3</b>	Fractions: Thirds, Fifths, and Eighths	<b>147</b>
<b>LESSON 31</b>	Pairs of Lines	<b>151</b>
<b>LESSON 32</b>	Angles • Polygons	<b>155</b>
<b>LESSON 33</b>	Rounding Numbers Using a Number Line	<b>162</b>
<b>LESSON 34</b>	Division with Zeros in the Quotient	<b>166</b>
<b>LESSON 35</b>	Problems About Comparing • Problems About Elapsed Time	<b>170</b>
<b>LESSON 36</b>	Classifying Triangles	<b>175</b>
<b>LESSON 37</b>	Drawing Pictures of Fractions	<b>180</b>
<b>LESSON 38</b>	Fractions and Mixed Numbers on a Number Line	<b>184</b>
<b>LESSON 39</b>	Comparing Fractions by Drawing Pictures	<b>189</b>
<b>LESSON 40</b>	Pictures of Mixed Numbers • Writing Quotients as Mixed Numbers, Part 1	<b>193</b>
<b>INVESTIGATION 4</b>	Measuring Angles	<b>198</b>
<b>LESSON 41</b>	Adding and Subtracting Fractions with Common Denominators	<b>202</b>
<b>LESSON 42</b>	Short Division • Divisibility by 3, 6, and 9	<b>207</b>

<b>LESSON 43</b>	Writing Quotients as Mixed Numbers, Part 2 • Adding and Subtracting Whole Numbers, Fractions, and Mixed Numbers	<b>212</b>
<b>LESSON 44</b>	Measuring Lengths with a Ruler	<b>217</b>
<b>LESSON 45</b>	Classifying Quadrilaterals	<b>223</b>
<b>LESSON 46</b>	Stories About a Fraction of a Group	<b>230</b>
<b>LESSON 47</b>	Simplifying Mixed Measures	<b>234</b>
<b>LESSON 48</b>	Reading and Writing Whole Numbers in Expanded Notation	<b>238</b>
<b>LESSON 49</b>	Solving Two-Step Word Problems	<b>242</b>
<b>LESSON 50</b>	Finding an Average	<b>246</b>
<b>INVESTIGATION 5</b>	Organizing and Analyzing Data	<b>251</b>
<b>LESSON 51</b>	Multiplying by Two-Digit Numbers	<b>258</b>
<b>LESSON 52</b>	Naming Numbers Through Hundred Billions	<b>263</b>
<b>LESSON 53</b>	Perimeter • Measures of a Circle	<b>268</b>
<b>LESSON 54</b>	Dividing by Multiples of 10	<b>273</b>
<b>LESSON 55</b>	Multiplying by Three-Digit Numbers	<b>277</b>
<b>LESSON 56</b>	Multiplying by Three-Digit Numbers That Include Zero	<b>280</b>
<b>LESSON 57</b>	Simple Probability	<b>284</b>
<b>LESSON 58</b>	Writing Quotients as Mixed Numbers, Part 3	<b>289</b>
<b>LESSON 59</b>	Fractions Equal to 1 • Subtracting a Fraction from 1	<b>293</b>
<b>LESSON 60</b>	Finding a Fraction to Complete a Whole	<b>298</b>
<b>INVESTIGATION 6</b>	Performing Probability Experiments	<b>302</b>
<b>LESSON 61</b>	Using Letters to Identify Geometric Figures	<b>307</b>
<b>LESSON 62</b>	Estimating Arithmetic Answers	<b>313</b>
<b>LESSON 63</b>	Subtracting a Fraction from a Whole Number Greater than 1	<b>317</b>
<b>LESSON 64</b>	Using Money to Model Decimal Numbers	<b>322</b>
<b>LESSON 65</b>	Decimal Parts of a Meter	<b>328</b>
<b>LESSON 66</b>	Reading a Centimeter Scale	<b>333</b>

<i>LESSON 67</i>	Writing Tenths and Hundredths as Decimal Numbers	338
<i>LESSON 68</i>	Naming Decimal Numbers	344
<i>LESSON 69</i>	Fractions of a Second • Comparing and Ordering Decimal Numbers	349
<i>LESSON 70</i>	Writing Equivalent Decimal Numbers • Writing Cents Correctly	354
<i>INVESTIGATION 7</i>	Pattern Recognition	359
<i>LESSON 71</i>	Fractions, Decimals, and Percents	365
<i>LESSON 72</i>	Area, Part 1	371
<i>LESSON 73</i>	Adding and Subtracting Decimal Numbers	377
<i>LESSON 74</i>	Converting Units of Length	382
<i>LESSON 75</i>	Changing Improper Fractions to Whole or Mixed Numbers	386
<i>LESSON 76</i>	Multiplying Fractions	391
<i>LESSON 77</i>	Converting Units of Weight and Mass	397
<i>LESSON 78</i>	Exponents and Powers	401
<i>LESSON 79</i>	Finding Equivalent Fractions by Multiplying by 1	407
<i>LESSON 80</i>	Prime and Composite Numbers	412
<i>INVESTIGATION 8</i>	Displaying Data	417
<i>LESSON 81</i>	Reducing Fractions, Part 1	425
<i>LESSON 82</i>	Greatest Common Factor (GCF)	431
<i>LESSON 83</i>	Properties of Geometric Solids	435
<i>LESSON 84</i>	Mean, Median, Mode, and Range	439
<i>LESSON 85</i>	Converting Units of Capacity	444
<i>LESSON 86</i>	Multiplying Fractions and Whole Numbers	448
<i>LESSON 87</i>	Using Manipulatives and Sketches to Divide Fractions	453
<i>LESSON 88</i>	Transformations	458
<i>LESSON 89</i>	Finding a Square Root	463
<i>LESSON 90</i>	Reducing Fractions, Part 2	467

<b>INVESTIGATION 9</b>	Line Graphs	472
<b>LESSON 91</b>	Simplifying Improper Fractions	476
<b>LESSON 92</b>	Dividing by Two-Digit Numbers	481
<b>LESSON 93</b>	Comparative Bar Graphs	486
<b>LESSON 94</b>	Using Estimation When Dividing by Two-Digit Numbers	490
<b>LESSON 95</b>	Reciprocals	494
<b>LESSON 96</b>	Using Reciprocals to Divide Fractions	499
<b>LESSON 97</b>	Ratios	504
<b>LESSON 98</b>	Negative Numbers	508
<b>LESSON 99</b>	Adding and Subtracting Whole Numbers and Decimal Numbers	512
<b>LESSON 100</b>	Simplifying Decimal Numbers	517
<b>INVESTIGATION 10</b>	Graphing Points on a Coordinate Plane	521
<b>LESSON 101</b>	Rounding Mixed Numbers to the Nearest Whole Number	524
<b>LESSON 102</b>	Subtracting Decimal Numbers Using Zeros	528
<b>LESSON 103</b>	Volume	532
<b>LESSON 104</b>	Rounding Decimal Numbers to the Nearest Whole Number	537
<b>LESSON 105</b>	Symmetry	542
<b>LESSON 106</b>	Reading and Ordering Decimal Numbers Through Ten-Thousandths	548
<b>LESSON 107</b>	Using Percent to Name Part of a Group	554
<b>LESSON 108</b>	Schedules	559
<b>LESSON 109</b>	Multiplying Decimal Numbers	564
<b>LESSON 110</b>	Multiplying Decimal Numbers: Using Zeros as Placeholders	569
<b>INVESTIGATION 11</b>	Scale Drawings	573
<b>LESSON 111</b>	Multiplying Decimal Numbers by 10, by 100, and by 1000	576

<b>LESSON 112</b>	Finding the Least Common Multiple of Two Numbers	<b>580</b>
<b>LESSON 113</b>	Writing Mixed Numbers as Improper Fractions	<b>584</b>
<b>LESSON 114</b>	Problems with No Solutions or Many Solutions	<b>589</b>
<b>LESSON 115</b>	Area, Part 2	<b>594</b>
<b>LESSON 116</b>	Finding Common Denominators to Add, Subtract, and Compare Fractions	<b>598</b>
<b>LESSON 117</b>	Dividing a Decimal Number by a Whole Number	<b>603</b>
<b>LESSON 118</b>	Using Zero as a Placeholder • Dividing Decimal Numbers by 10, by 100, and by 1000	<b>608</b>
<b>LESSON 119</b>	Dividing by a Decimal Number	<b>613</b>
<b>LESSON 120</b>	Multiplying Mixed Numbers	<b>617</b>
<b>INVESTIGATION 12</b>	Tessellations	<b>621</b>
<b>TOPIC A</b>	Roman Numerals Through 39	<b>629</b>
<b>TOPIC B</b>	Roman Numerals Through Thousands	<b>631</b>
<b>TOPIC C</b>	Base 5	<b>632</b>
	Supplemental Practice Problems for Selected Lessons	<b>635</b>
	Glossary	<b>665</b>
	Index	<b>697</b>

## Sequences • Digits

## WARM-UP

**Facts Practice:** 100 Addition Facts (Test A)<sup>†</sup>**Mental Math:** Count by tens from 10 to 100. Count by hundreds from 100 to 1000.

a.  $3 + 3$

b.  $30 + 30$

c.  $300 + 300$

d.  $40 + 50$

e.  $200 + 600$

f.  $50 + 50$

g.  $20 + 20 + 20$

h.  $500 + 500 + 500$

**Problem Solving:**

The counting numbers are 1, 2, 3, 4, and so on. How many one-digit counting numbers are there?

## NEW CONCEPTS

**Sequences** Counting is a math skill that we learn early in life. Counting by ones, we say the numbers

1, 2, 3, 4, 5, 6, ...

These numbers are called **counting numbers**. We can also count by a number other than one. Below we show the first five numbers for counting by twos and the first five numbers for counting by fives.

2, 4, 6, 8, 10, ...

5, 10, 15, 20, 25, ...

An ordered list of numbers forms a **sequence**. Each member of the sequence is a **term**. The three dots mean that the sequence continues even though the numbers are not written. We can study a sequence to discover its counting pattern, or rule. The rule can be used to find more terms in the sequence.

**Example 1** What are the next three terms in this counting sequence?

3, 6, 9, 12, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, ...

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

**Solution** The pattern is “Count up by threes.” To find the next three terms, we may count up by threes, or we may count up by ones and emphasize every third term (one, two, *three*, four, five, *six*, ...). Either way, we find that the next three terms are 15, 18, and 21.

**Example 2** Describe the rule for this counting sequence. What is the next term in the sequence?

56, 49, 42, \_\_\_\_\_, ...

**Solution** This sequence counts down. We find that the rule for this sequence is “**Count down by sevens.**” Counting down by seven from 42 gives us 35.

**Digits** There are ten **digits** in our number system. They are 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9. The number 385 has three digits, and the last digit is 5. The number 148,567,896,094 has twelve digits, and the last digit is 4.

**Example 3** The number 186,000 has how many digits?

**Solution** The number 186,000 has **six digits**.

**Example 4** What is the last digit of 26,348?

**Solution** The number 26,348 has five digits. The last digit is 8.

## LESSON PRACTICE

---

**Practice set** Describe the rule for each counting sequence. Then write the next three terms in the sequence.

a. 6, 8, 10, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, ...

b. 7, 14, 21, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, ...

c. 4, 8, 12, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, ...

d. 21, 18, 15, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, ...

e. 45, 40, 35, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, ...

f. 12, 18, 24, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, ...



How many digits are in each of these numbers?

g. 36,756

h. 8002

i. 1,287,495

What is the last digit of each of these numbers?

j. 17

k. 3586

l. 654,321

## MIXED PRACTICE

---

**Problem set** Write the next term in each counting sequence:

1. 10, 15, 20, \_\_\_\_\_, ...

2. 56, 49, 42, \_\_\_\_\_, ...

3. 8, 16, 24, \_\_\_\_\_, ...

4. 18, 27, 36, 45, \_\_\_\_\_, ...

5. 24, 21, 18, \_\_\_\_\_, ...

6. 32, 28, 24, 20, \_\_\_\_\_, ...

Write the missing term in each counting sequence:

7. 7, 14, \_\_\_\_\_, 28, 35, ...

8. 40, \_\_\_\_\_, 30, 25, 20, ...

9. 20, \_\_\_\_\_, 28, 32, 36, ...

10. 24, 32, \_\_\_\_\_, 48, ...

11. \_\_\_\_\_, 36, 30, 24, ...

12. 21, 28, \_\_\_\_\_, 42, ...

Describe the rule for each counting sequence, and write the next three terms:

13. 3, 6, 9, 12, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, ...

14. 8, 16, 24, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, ...

15. 6, 12, 18, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, ...

16. 40, 35, 30, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, ...

17. 18, 21, 24, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, ...

18. 9, 18, 27, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, ...

19. What word names an ordered list of numbers?

How many digits are in each number?

20. 186,000

21. 73,842

22. 30,004,091

What is the last digit of each number?

23. 26,348

24. 347

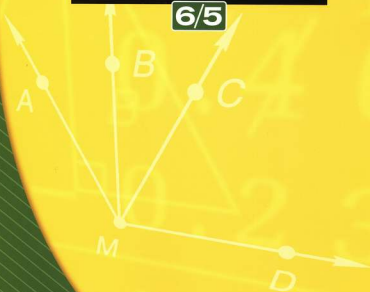
25. 9,675,420

Tests and Worksheets

**SAXON**Math™

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# CONTENTS

Introduction.....	9
<b>Facts Practice Tests and Activity Sheets.....</b>	<b>11</b>
<i>for use with</i>	
Lesson 1.....	13
Lesson 2.....	14
Lesson 3.....	15
Lesson 4.....	31
Lesson 5.....	32
Lesson 6.....	33
Lesson 7.....	34
Lesson 8.....	35
Lesson 9.....	36
Lesson 10.....	37
Test 1.....	38
Investigation 1.....	39
Lesson 11.....	43
Lesson 12.....	44
Lesson 13.....	45
Lesson 14.....	46
Lesson 15.....	47
Test 2.....	51
Lesson 16.....	52
Lesson 17.....	53
Lesson 18.....	54
Lesson 19.....	55
Lesson 20.....	56
Test 3.....	57
Investigation 2.....	59
Lesson 21.....	65

Lesson 22 .....	66
Lesson 23 .....	67
Lesson 24 .....	68
Lesson 25 .....	69
Test 4 .....	70
Lesson 26 .....	71
Lesson 27 .....	72
Lesson 28 .....	73
Lesson 29 .....	74
Lesson 30 .....	75
Test 5 .....	76
Investigation 3 .....	77
Lesson 31 .....	83
Lesson 32 .....	84
Lesson 33 .....	85
Lesson 34 .....	86
Lesson 35 .....	87
Test 6 .....	88
Lesson 36 .....	89
Lesson 37 .....	90
Lesson 38 .....	91
Lesson 39 .....	92
Lesson 40 .....	93
Test 7 .....	94
Investigation 4 .....	95
Lesson 41 .....	97
Lesson 42 .....	98
Lesson 43 .....	99
Lesson 44 .....	100
Lesson 45 .....	101

Test 8 .....	102
Lesson 46 .....	103
Lesson 47 .....	104
Lesson 48 .....	105
Lesson 49 .....	106
Lesson 50 .....	107
Test 9 .....	108
Lesson 51 .....	109
Lesson 52 .....	110
Lesson 53 .....	111
Lesson 54 .....	115
Lesson 55 .....	116
Test 10 .....	117
Lesson 56 .....	118
Lesson 57 .....	119
Lesson 58 .....	120
Lesson 59 .....	121
Lesson 60 .....	122
Test 11 .....	123
Investigation 6 .....	125
Lesson 61 .....	127
Lesson 62 .....	128
Lesson 63 .....	129
Lesson 64 .....	130
Lesson 65 .....	131
Test 12 .....	137
Lesson 66 .....	138
Lesson 67 .....	139
Lesson 68 .....	143
Lesson 69 .....	144

Lesson 70 .....	145
Test 13 .....	146
Lesson 71 .....	147
Lesson 72 .....	148
Lesson 73 .....	149
Lesson 74 .....	150
Lesson 75 .....	151
Test 14 .....	152
Lesson 76 .....	153
Lesson 77 .....	154
Lesson 78 .....	155
Lesson 79 .....	156
Lesson 80 .....	157
Test 15 .....	158
Lesson 81 .....	159
Lesson 82 .....	160
Lesson 83 .....	161
Lesson 84 .....	162
Lesson 85 .....	163
Test 16 .....	164
Lesson 86 .....	165
Lesson 87 .....	166
Lesson 88 .....	167
Lesson 89 .....	168
Lesson 90 .....	169
Test 17 .....	170
Lesson 91 .....	171
Lesson 92 .....	172
Lesson 93 .....	173
Lesson 94 .....	174

Lesson 95.....	175
Test 18.....	176
Lesson 96.....	177
Lesson 97.....	178
Lesson 98.....	179
Lesson 99.....	180
Lesson 100.....	181
Test 19.....	182
Investigation 10.....	183
Lesson 101.....	185
Lesson 102.....	186
Lesson 103.....	187
Lesson 104.....	188
Lesson 105.....	189
Test 20.....	190
Lesson 106.....	191
Lesson 107.....	192
Lesson 108.....	193
Lesson 109.....	194
Lesson 110.....	195
Test 21.....	196
Lesson 111.....	197
Lesson 112.....	198
Lesson 113.....	199
Lesson 114.....	200
Lesson 115.....	201
Test 22.....	202
Lesson 116.....	203
Lesson 117.....	204
Lesson 119.....	205

Lesson 120 .....	206
Test 23 .....	207
Investigation 12 .....	209
<b>Tests</b> .....	<b>213</b>
Testing Schedule .....	214
Test 1 .....	215
Test 2 .....	217
Test 3 .....	219
Test 4 .....	221
Test 5 .....	223
Test 6 .....	225
Test 7 .....	227
Test 8 .....	229
Test 9 .....	231
Test 10 .....	233
Test 11 .....	235
Test 12 .....	237
Test 13 .....	239
Test 14 .....	241
Test 15 .....	243
Test 16 .....	245
Test 17 .....	247
Test 18 .....	249
Test 19 .....	251
Test 20 .....	253
Test 21 .....	255
Test 22 .....	257
Test 23 .....	259
<b>Recording Forms</b> .....	<b>261</b>



# FACTS PRACTICE TEST

# A

## 100 Addition Facts

For use with Lesson 1

Name \_\_\_\_\_

Time \_\_\_\_\_

Add.

$\begin{array}{r} 3 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 1 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ + 0 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 0 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 3 \\ \hline \end{array}$
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$\begin{array}{r} 4 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ + 1 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ + 2 \\ \hline \end{array}$
$\begin{array}{r} 0 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 0 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ + 0 \\ \hline \end{array}$
$\begin{array}{r} 9 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 0 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 1 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ + 6 \\ \hline \end{array}$
$\begin{array}{r} 4 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ + 0 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ + 1 \\ \hline \end{array}$
$\begin{array}{r} 9 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ + 0 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ + 8 \\ \hline \end{array}$

## Measuring Angles

For use with Investigation 4

Name \_\_\_\_\_

Use a protractor to measure each angle on this page. Write your measurements inside each angle.

Position the protractor on the angle so that:

1. The protractor is centered on the vertex.
2. One side of the angle passes through one of the  $0^\circ$  marks on the protractor.
3. The other side of the angle passes through the scale.

To decide which scale to read, first note whether you are measuring an acute angle (less than  $90^\circ$ ) or an obtuse angle (greater than  $90^\circ$ ).

a.



b.



c.



d.



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

Name \_\_\_\_\_

- On Pedro's team there are twenty-three girls and eighteen boys. Altogether, how many boys and girls are on his team?  
(17)
- On Siew's team there are 50 boys and girls. Half the athletes are girls. How many girls are on Siew's team?  
(2)
- For the fact family 1, 4, and 5, write two addition facts and two subtraction facts.  
(18)
- Use digits to write three hundred seven thousand, eight hundred thirteen.  
(7)
- Use the three digits 2, 3, and 4 once each to make an even number greater than 400.  
(2)

Find each missing addend:

6.  $14 + n = 22$   
(10)

7.  $b + 11 = 50$   
(10)

8. Which digit in 82,384 shows the number of hundreds?  
(2)

9. Compare:  $37 - 7$   $\bigcirc$   $32 - 2$   
(4, 8)

10. Think of two even numbers. Add them together. Is the sum odd or even?  
(2)

11. Kelly is third in line. Bobby is fifteenth in the same line. How many people are between them?  
(7)

12. 
$$\begin{array}{r} 143 \\ 87 \\ + 623 \\ \hline \end{array}$$
  
(8)

13. 
$$\begin{array}{r} 327 \\ - 239 \\ \hline \end{array}$$
  
(8)

14. 
$$\begin{array}{r} 900 \\ - 238 \\ \hline \end{array}$$
  
(8)

15. 
$$\begin{array}{r} 5 \\ 6 \\ 2 \\ 9 \\ + 7 \\ \hline \end{array}$$
  
(10)

16.  $\$229 - \$40$   
(9)

17.  $\$23 + \$276 + \$3$   
(8)

Write the next term in each counting sequence:

18. 9, 18, 27, \_\_\_\_\_, ...  
(1)

19. 35, 40, 45, \_\_\_\_\_, ...  
(7)

20. 63, 56, 49, \_\_\_\_\_, ...  
(7)

Solutions Manual

**SAXON**Math™

HOMESCHOOL

**6/5**



Hake  
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## Solutions Manual



Stephen Hake  
John Saxon

Lessons and Investigations . . . . .	1
Appendix Topics . . . . .	243
Supplemental Practice . . . . .	247
Facts Practice Tests . . . . .	277
Tests . . . . .	291



## LESSON 1, WARM-UP

- a. 6
- b. 60
- c. 600
- d. 90
- e. 800
- f. 100
- g. 60
- h. 1500

Problem Solving  
9

- j. 7
- k. 6
- l. 1

## LESSON 1, MIXED PRACTICE

1. The rule is "Count up by fives."  
25
2. The rule is "Count down by sevens."  
35
3. The rule is "Count up by eights."  
32
4. The rule is "Count up by nines."  
54
5. The rule is "Count down by threes."  
15
6. The rule is "Count down by fours."  
16
7. The rule is "Count up by sevens."  
21
8. The rule is "Count down by fives."  
35
9. The rule is "Count up by fours."  
24
10. The rule is "Count up by eights."  
40
11. The rule is "Count down by sixes."  
42
12. The rule is "Count up by sevens."  
35
13. The rule is "Count up by threes."  
15, 18, 21

## LESSON 1, LESSON PRACTICE

- a. The rule is "Count up by twos."  
12, 14, 16
- b. The rule is "Count up by sevens."  
28, 35, 42
- c. The rule is "Count up by fours."  
16, 20, 24
- d. The rule is "Count down by threes."  
12, 9, 6
- e. The rule is "Count down by fives."  
30, 25, 20
- f. The rule is "Count up by sixes."  
30, 36, 42
- g. 5 digits
- h. 4 digits
- i. 7 digits

## SOLUTIONS

14. The rule is "Count up by eights."  
32, 40, 48
15. The rule is "Count up by sixes."  
24, 30, 36
16. The rule is "Count down by fives."  
25, 20, 15
17. The rule is "Count up by threes."  
27, 30, 33
18. The rule is "Count up by nines."  
36, 45, 54
19. Sequence
20. 6 digits
21. 5 digits
22. 8 digits
23. 8
24. 7
25. 0
- 

### LESSON 2, WARM-UP

- a. 12
- b. 120
- c. 1200
- d. 130
- e. 150
- f. 900
- g. 180
- h. 200

Problem Solving  
90

### LESSON 2, ACTIVITY

Counting number

11	12	13	14	15	16	17	18	19	20
$5\frac{1}{2}$	6	$6\frac{1}{2}$	7	$7\frac{1}{2}$	8	$8\frac{1}{2}$	9	$9\frac{1}{2}$	10

Half of number

### LESSON 2, LESSON PRACTICE

- a. Even
- b. Even
- c. Odd
- d. Odd
- e. Even
- f. Even
- g. Even number
- h.  $3\frac{1}{2}$  cookies
- 

### LESSON 2, MIXED PRACTICE

1. Odd
2. 0
3. 7
4. Odd
5. Even
6. Odd
7. 3716
8. 56,789
9. 333,456
10. 323

11. The rule is "Count up by threes."

18, 21, 24

12. The rule is "Count up by eights."

40, 48, 56

13. The rule is "Count down by tens."

90, 80, 70

14. The rule is "Count down by fours."

16, 12, 8

15. The rule is "Count down by fives."

40, 35, 30

16. The rule is "Count up by nines."

45, 54, 63

17. The rule is "Count down by threes."

27, 24, 21

18. The rule is "Count up by sixes."

36, 42, 48

19. The rule is "Count up by sevens."

35, 42, 49

20. The rule is "Count down by sixes."

48, 42, 36

21. The rule is "Count down by fours."

36, 32, 28

22. The rule is "Count down by nines."

72, 63, 54

23. The rule is "Count down by eights."

64, 56, 48

24. The rule is "Count down by sevens."

63, 56, 49

25. B. 31

26.  $2\frac{1}{2}$

27. B. Half of 12

### LESSON 3, WARM-UP

a. 100

b. 320

c. 340

d. 540

e. 290

f. 650

g. 180

h. 720

### Problem Solving

900

### LESSON 3, ACTIVITY

1. 1 hundred + 2 tens + 0 ones

2. 1 hundred + 3 tens + 2 ones

### LESSON 3, LESSON PRACTICE

a. 6

b. 350

c. \$215

### LESSON 3, MIXED PRACTICE

1. 578

2. 250

3. 6

4. 5