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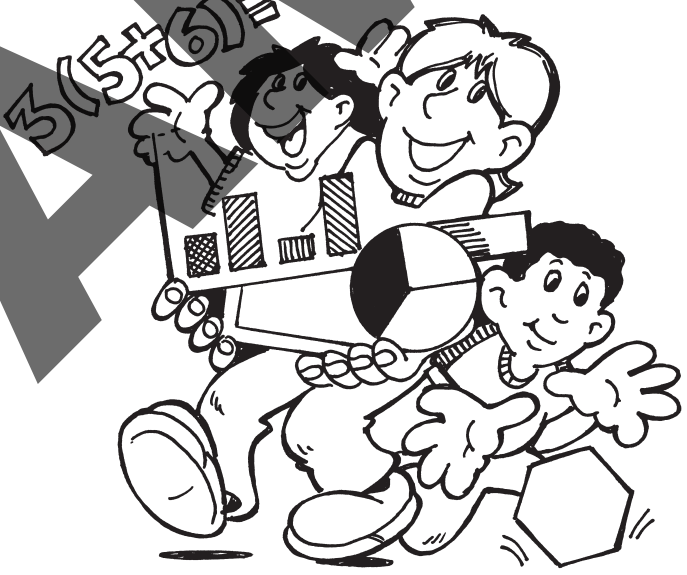


Introduction

Seventh grade is an extremely important math year in the lives of students. It is often one of the final years for students to solidify their basic math skills before moving on to the abstract world of algebra and geometry. The focus of *Seventh-Grade Math Minutes* is math fluency—teaching students to solve problems effortlessly and rapidly. The problems in this book provide students with practice in every key area of seventh-grade math instruction, including:

- computation
- number sense
- graphing
- problem solving
- measurement
- data analysis and probability
- spatial connections
- reasoning and proof
- algebra and functions
- communication
- geometry

Use this comprehensive resource to improve your students' overall math fluency, which will promote greater self-confidence in their math skills as well as provide the everyday practice necessary to succeed in testing situations.

Seventh-Grade Math Minutes features 100 "Minutes." Each Minute consists of 10 classroom-tested problems of varying degrees of difficulty for students to complete within a one- to two-minute period. This unique format offers students an ongoing opportunity to improve their own fluency in a manageable, nonthreatening format. The quick, timed format, combined with instant feedback, makes this a challenging and motivational assignment students will look forward to using each day. Students become active learners as they discover mathematical relationships and apply acquired understanding to complex situations and to the solution of realistic problems in each Minute.

How to Use This Book

Seventh-Grade Math Minutes is designed to be implemented in numerical order, starting with Minute One. Students who need the most support will find the order in which skills are introduced most helpful in building and retaining confidence and success. For example, the first time that students are asked to provide the value of pi to the hundredths place, the digits in the ones and tenths place are provided. The second time, the digit in the ones place is provided. It is not until the third time that students are asked the value of pi that they must recall the number without additional support.

Seventh-Grade Math Minutes can be used in a variety of ways. Use one Minute a day as a warm-up activity, bell work, review, assessment, or a homework assignment. Other uses include incentive projects and extra credit. Keep in mind that students will get the most benefit from their daily Minute if they receive immediate feedback. If you assign the Minute as homework, correct it in class as soon as students are settled at the beginning of the day.

If you use the Minute as a timed activity, place the paper facedown on the students' desks or display it as a transparency. Use a clock or kitchen timer to measure one minute—or more if needed. As the Minutes become more advanced, use your discretion on extending the time frame to several minutes if needed. Encourage students to concentrate on completing each problem successfully and not to dwell on problems they cannot complete. At the end of the allotted time, have the students stop working. Then read the answers from the answer key (pages 108–112) or display them on a transparency. Have students correct their own work and record their scores on the Minute Journal reproducible (page 6). Then have the class go over each problem together to discuss the solution(s). Spend more time on problems that were clearly challenging for most of the class. Tell students that problems that seemed difficult for them will appear again on future Minutes and that they will have another opportunity for success.

Teach students strategies for improving their scores, especially if you time their work on each Minute. Include strategies such as the following:

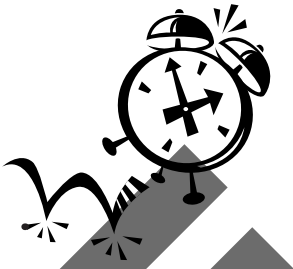
- leave more time-consuming problems for last
- come back to problems they are unsure of after they have completed all other problems
- make educated guesses when they encounter problems with which they are unfamiliar
- rewrite word problems as number problems
- use mental math whenever possible
- underline important information
- draw pictures

Students will ultimately learn to apply these strategies to other timed-test situations.

The Minutes are designed to improve math fluency and should not be included as part of a student's overall math grade. However, the Minutes provide an excellent opportunity for you to see which skills the class as a whole needs to practice or review. This information will help you plan the content of future math lessons. A class that consistently has difficulty reading graphs, for example, may make excellent use of your lesson in that area, especially if the students know they will have another opportunity to achieve success in reading graphs on a future Minute. Have students file their Math Journal and Minutes for the week in a location accessible to you both. You will find that math skills that require review will be revealed during class discussions of each Minute. You may find it useful to review the week's Minutes again at the end of the week with the class before sending them home with students.

While you will not include student Minute scores in your formal grading, you may wish to recognize improvements by awarding additional privileges or offering a reward if the entire class scores above a certain level for a week or more. Showing students that you recognize their efforts provides additional motivation to succeed.

Minute Journal



Name _____

Minute	Date	Score	Minute	Date	Score	Minute	Date	Score	Minute	Date	Score
1			26			51			76		
2			27			52			77		
3			28			53			78		
4			29			54			79		
5			30			55			80		
6			31			56			81		
7			32			57			82		
8			33			58			83		
9			34			59			84		
10			35			60			85		
11			36			61			86		
12			37			62			87		
13			38			63			88		
14			39			64			89		
15			40			65			90		
16			41			66			91		
17			42			67			92		
18			43			68			93		
19			44			69			94		
20			45			70			95		
21			46			71			96		
22			47			72			97		
23			48			73			98		
24			49			74			99		
25			50			75			100		

Scope and Sequence

Skill	Minute in which Skill First Appears
Order of Operations	1
Whole Numbers (add, subtract, multiply, divide)	1
Fractions (add, subtract, multiply, divide, equivalent, reducing)	1
Perimeter	1
Graphs (Bar, Line, Circle)	1
One-step Algebra Equations	1
Patterns/Sequences	1
Algebraic Substitution/Expressions	2
Area (squares, rectangles, parallelograms)	2
Exponents/Squares/Square roots	2
Money	2
Bar Notation	3
Inequalities	3
Spatial Reasoning	3
Multiplying and Dividing by 10 and Powers of 10	4
Decimals (addition, subtraction, multiplication, division)	4
Estimation	4
Percentages	4
Nets	4
Coordinate Graphs (rows and columns)	4
Problem Solving/Applied Math	5
Venn Diagrams	6
Geometry (congruent, similar, shapes, vertices, sides, degrees, vocabulary)	7
Place Value	8
Number Sense and Reasonable Answers	8

Skill	Minute in which Skill First Appears
Factors/Multiples	9
Probability	10
Symmetry	10
Integers (add, subtract, multiply, divide)	12
Prime and Composite Numbers	12
Ratios	14
Divisibility	15
Time	15
Number Lines	19
Ordering and Comparing Numbers and Amounts	22
Circles (diameters, radius)	23
Analogies	25
Like Amounts	30
Frequency Tables	41
Volume	51
Function Rules	52
Coordinate Grids	53
Lines (parallel, perpendicular, intersecting, slopes, intercepts)	53
Angles (right, obtuse, acute)	60
Surface Area	61
Stem-Leaf Plots	71
Math Crossword Puzzles	72
Mean/Median/Mode	74
Percent Increase and Decrease	76
Absolute Value	89
Recognizing Errors	91

NAME:

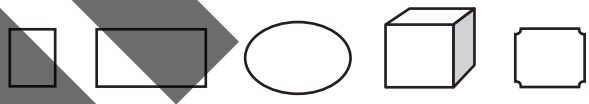
MINUTE 1

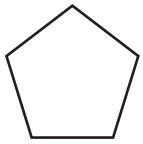
1. Simplify: $12(2+7+1) =$

2. $\frac{3}{10} \bullet \frac{7}{10} =$

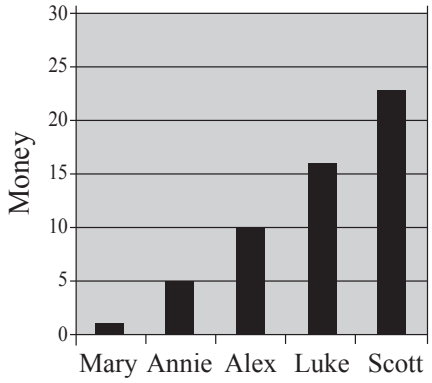
3. Circle all of the following equal to $\frac{2}{5}$: 0.4 $\frac{4}{100}$ 40% 

4. $10 \bullet \square = 5$

5. Cross out the three-dimensional shape. 

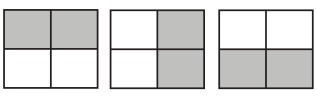
6. Each side of the regular pentagon is 5 centimeters. What is the perimeter? _____ 

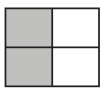
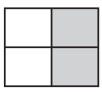
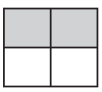
7. In the graph, Alex has _____ times as much money as Annie.



8. If $a = 5$ and $b = 4$, then $2a + b =$ _____.

9. If $3x = 27$, then $x =$ _____.

10. Which of the following shapes comes next in the pattern? 

a.  **b.**  **c.**  **d.** 

NAME:

MINUTE 2

1. $\frac{12}{2} \bullet \frac{1}{3} =$

2. Use the correct symbol (=, >, or <) to complete: $\frac{3}{10} + \frac{7}{10} \square \frac{3}{10} \bullet \frac{7}{10}$

3. Which of the following does not belong? Circle your answer.

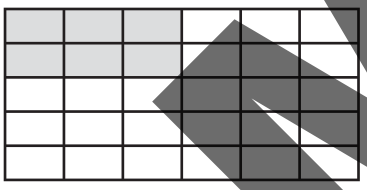
   Two-tenths 0.2 20%

4. The distance between two cities would most likely be measured in:

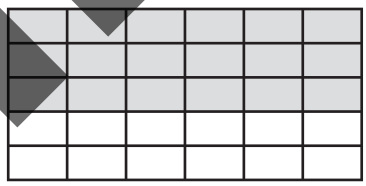
   a. feet **b.** inches **c.** yards **d.** miles

5. The shaded area in figure B is _____ times greater than the shaded area in figure A.

   A

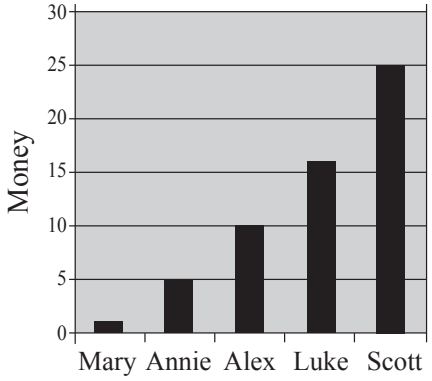


   B



6. The perimeter around the shaded area in figure A in Problem 5 is _____ units.

7. In the graph, _____ has five times as much money as _____.



For Problems 8–10, evaluate if $a = 4$, $b = 6$, and $c = 2$.

8. $ab =$

9. $\frac{a+b}{c} =$

10. $b^2 =$