

**Math
Practice
Puzzles**

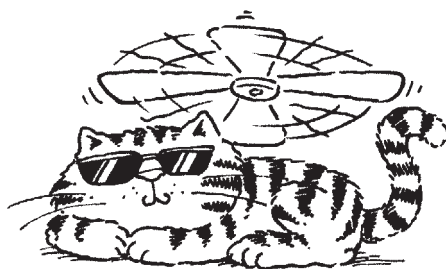
Fractions and Decimals

by
Bob Olenych

S C H O L A S T I C
PROFESSIONAL BOOKS

New York • Toronto • London • Auckland • Sydney
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DEDICATION
To Paula with all my love.



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Introduction

WORKING WITH FRACTIONS AND DECIMALS CAN BE FUN!

When students grasp how fractions and decimals appear in their everyday lives—from dividing a chocolate bar into equal servings to producing change from a money transaction—they are ready to work with these concepts in more advanced ways. I build on each new understanding and follow up with engaging, self-checking practice exercises like the ones in this book.

WHAT YOU'LL FIND IN THIS BOOK

This book offers a collection of 37 fraction and decimal puzzles and activities for a broad range of skills and abilities. The book begins with activities involving fractions, progresses to decimals, and finally moves into mixed practice. The puzzles are arranged according to skill, from easy to difficult. You can match the needs of your students and target a specific skill by checking the skill description listed both in the table of contents and under the objective on each activity page.

I've included some quick-and-easy student reference pages for both fractions and decimals (pages 5–6 and 26–27). These pages teach some useful tips for students as they add, subtract, multiply, and divide fractions, work with equivalent fractions, and express fractions in simplest terms. I've also provided some tips for the basic operations with decimals and for converting fractions to decimals.

HOW TO USE THIS BOOK

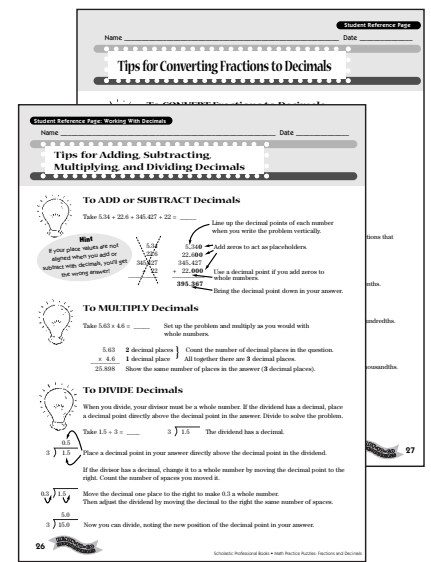
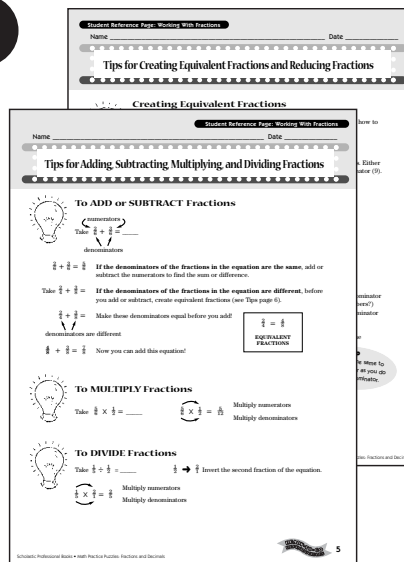
Use these puzzles in the way that best suits the needs of your class. You may find it helpful to assign certain puzzles as practice work to follow a lesson, as review work, or as homework. You also may want to have students work on different puzzles depending on the skill areas in which each student needs practice. The beauty of these activities is that almost all of them are self-correcting. Whether they are solving a riddle, breaking a code, or filling in a number puzzle, students are encouraged to check each problem so that they can finish the puzzle correctly.

CONNECTIONS TO THE MATH STANDARDS

Most of the puzzles in this book target NCTM 2000 objectives listed under the Number and Operations standard. These objectives include understanding ways to represent numbers, determining meanings of operations and how they relate to one another, and computing with fluency and accuracy. This book is packed with exercises that require students to use the operations of multiplication and division in a variety of formats, including word problems and multiple-step equations.

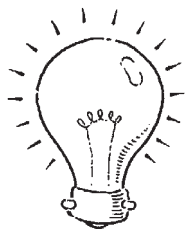
I'm confident that your students, like mine, will enjoy this collection of puzzles and reap the benefits of practicing these essential skills.

—Bob Olenych



Name _____ Date _____

Tips for Adding, Subtracting, Multiplying, and Dividing Fractions



To ADD or SUBTRACT Fractions

numerators

Take $\frac{2}{6} + \frac{3}{6} = \underline{\quad}$

denominators

$$\frac{2}{6} + \frac{3}{6} = \frac{5}{6}$$

If the denominators of the fractions in the equation are the same, add or subtract the numerators to find the sum or difference.

Take $\frac{2}{4} + \frac{3}{8} =$

If the denominators of the fractions in the equation are different, before you add or subtract, create equivalent fractions (see Tips page 6).

$$\frac{2}{4} + \frac{3}{8} =$$

Make these denominators equal before you add!

denominators are different

$$\frac{4}{8} + \frac{3}{8} = \frac{7}{8}$$

Now you can add this equation!

$$\frac{2}{4} = \frac{4}{8}$$

**EQUIVALENT
FRACTIONS**



To MULTIPLY Fractions

Take $\frac{5}{6} \times \frac{1}{2} = \underline{\quad}$

$$\frac{5}{6} \times \frac{1}{2} = \frac{5}{12}$$

Multiply numerators

Multiply denominators



To DIVIDE Fractions

Take $\frac{1}{5} \div \frac{1}{2} = \underline{\quad}$

$\frac{1}{2} \rightarrow \frac{2}{1}$ Invert the second fraction of the equation.

$$\frac{1}{5} \times \frac{2}{1} = \frac{2}{5}$$

Multiply numerators

Multiply denominators

Name _____ Date _____

Tips for Creating Equivalent Fractions and Reducing Fractions



Creating Equivalent Fractions

Since you can't add or subtract fractions with different denominators, knowing how to make equivalent fractions is essential.

Take $\frac{1}{9} + \frac{1}{3} =$ _____

Because the denominators are different, solving this problem is like adding apples and oranges. Either you need to add in thirds or in ninths—how do you choose? Go for the least common denominator (9). You can solve this problem by showing both fractions as ninths.

Here's how to change $\frac{1}{3}$ into ninths:

First, identify the lowest common denominator (the LCD). **9**

Ask: What number can I multiply by to get this new denominator? $\frac{1}{3} \times \mathbf{3} = \frac{?}{9}$

Multiply the numerator by that same number. $\frac{1}{3} \times \mathbf{3} = \frac{3}{9}$

So, $\frac{1}{3} = \frac{3}{9}$.

Now you can solve the problem: $\frac{1}{9} + \frac{3}{9} = \frac{4}{9}$.



Reducing Fractions to Simplest Form

1. To express a fraction in its simplest form, ask: Do the numerator and the denominator share any of the same factors? (Can they be divided by any of the same numbers?)
2. Find the largest common factor and divide both the numerator and the denominator by that number.

Take $\frac{3}{9}$ Ask: Do the numerator 3 and the denominator 9 share any of the same factors? Answer: Yes! They can both be divided by **3**, the **largest common factor**.

$$\frac{3}{9} \div 3 = \frac{1}{3}$$

Divide the numerator 3 by **3** to get the new numerator, 1.

Divide the denominator 9 by **3** to get the new denominator, 3.

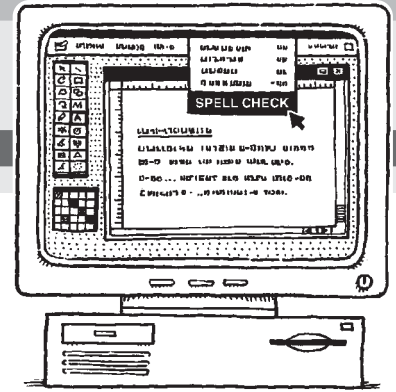
So, $\frac{3}{9} = \frac{1}{3}$.

Tip

Always do the same to the numerator as you do to the denominator.

Name _____ Date _____

Break the Code



Why should you always read your work after using spell check?

Find the missing numerator or the denominator to make each pair of fractions equivalent. When you complete a problem, locate your answer in the code box below. Write the letter from each problem in the code box with the matching answer. If the answer appears in more than one code box, fill in each one with the same letter.

$\frac{1}{2} = \frac{\mathbf{T}}{14}$ T = 7	$\frac{7}{8} = \frac{49}{\mathbf{E}}$ E =	$\frac{4}{9} = \frac{\mathbf{A}}{27}$ A =
$\frac{9}{10} = \frac{27}{\mathbf{R}}$ R =	$\frac{2}{5} = \frac{\mathbf{W}}{15}$ W =	$\frac{5}{6} = \frac{30}{\mathbf{H}}$ H =
$\frac{4}{6} = \frac{\mathbf{N}}{24}$ N =	$\frac{3}{7} = \frac{9}{\mathbf{O}}$ O =	$\frac{3}{4} = \frac{\mathbf{M}}{20}$ M =
$\frac{4}{15} = \frac{12}{\mathbf{I}}$ I =	$\frac{5}{12} = \frac{\mathbf{G}}{24}$ G =	$\frac{2}{3} = \frac{18}{\mathbf{K}}$ K =
$\frac{5}{7} = \frac{\mathbf{U}}{28}$ U =	$\frac{3}{5} = \frac{15}{\mathbf{Y}}$ Y =	$\frac{2}{8} = \frac{\mathbf{S}}{32}$ S =

8	56	6	T	7	36	56	25	'	30	56	27	16	21	6
15	45	8	8	8	T	7	56	12	27	8	45	16		
25	21	20	'	30	56	30	45	10	36	T	7	45	16	10

Equivalent Fraction Match

In the grid below, there are 13 columns of fractions with a fraction at the top of each column. Shade in all of the boxes directly below the fraction that have an equivalent value to the top fraction. You will decode an answer to the following question:



What four letters did the crowd chant to the man who had been in the ring with the professional wrestler?

$\frac{1}{4}$	$\frac{2}{5}$	$\frac{3}{8}$	$\frac{1}{3}$	$\frac{4}{6}$	$\frac{1}{5}$	$\frac{1}{2}$	$\frac{7}{9}$	$\frac{1}{8}$	$\frac{2}{3}$	$\frac{3}{5}$	$\frac{7}{10}$	$\frac{3}{4}$
$\frac{5}{6}$	$\frac{4}{16}$	$\frac{18}{32}$	$\frac{3}{9}$	$\frac{14}{24}$	$\frac{7}{35}$	$\frac{4}{9}$	$\frac{15}{18}$	$\frac{2}{19}$	$\frac{4}{5}$	$\frac{6}{15}$	$\frac{10}{30}$	$\frac{5}{8}$
$\frac{4}{9}$	$\frac{4}{6}$	$\frac{6}{12}$	$\frac{7}{21}$	$\frac{10}{18}$	$\frac{3}{15}$	$\frac{1}{8}$	$\frac{2}{3}$	$\frac{4}{24}$	$\frac{8}{12}$	$\frac{12}{18}$	$\frac{3}{5}$	$\frac{9}{12}$
$\frac{3}{8}$	$\frac{6}{10}$	$\frac{7}{9}$	$\frac{5}{15}$	$\frac{1}{3}$	$\frac{2}{10}$	$\frac{4}{9}$	$\frac{3}{5}$	$\frac{1}{2}$	$\frac{12}{18}$	$\frac{7}{9}$	$\frac{14}{20}$	$\frac{1}{2}$
$\frac{3}{12}$	$\frac{8}{20}$	$\frac{12}{32}$	$\frac{4}{12}$	$\frac{4}{5}$	$\frac{5}{25}$	$\frac{7}{13}$	$\frac{21}{28}$	$\frac{2}{5}$	$\frac{4}{6}$	$\frac{12}{20}$	$\frac{1}{2}$	$\frac{6}{12}$
$\frac{7}{28}$	$\frac{15}{18}$	$\frac{18}{48}$	$\frac{6}{18}$	$\frac{8}{12}$	$\frac{4}{20}$	$\frac{4}{8}$	$\frac{14}{18}$	$\frac{4}{32}$	$\frac{10}{15}$	$\frac{6}{10}$	$\frac{15}{30}$	$\frac{2}{3}$
$\frac{2}{8}$	$\frac{6}{15}$	$\frac{6}{16}$	$\frac{4}{9}$	$\frac{2}{5}$	$\frac{4}{8}$	$\frac{7}{14}$	$\frac{28}{32}$	$\frac{2}{16}$	$\frac{6}{9}$	$\frac{4}{16}$	$\frac{35}{50}$	$\frac{7}{16}$
$\frac{5}{20}$	$\frac{4}{10}$	$\frac{9}{16}$	$\frac{3}{6}$	$\frac{12}{16}$	$\frac{6}{28}$	$\frac{10}{20}$	$\frac{4}{6}$	$\frac{3}{24}$	$\frac{16}{24}$	$\frac{6}{9}$	$\frac{27}{40}$	$\frac{6}{8}$
$\frac{6}{24}$	$\frac{10}{30}$	$\frac{15}{40}$	$\frac{10}{45}$	$\frac{18}{30}$	$\frac{6}{35}$	$\frac{3}{6}$	$\frac{3}{4}$	$\frac{6}{48}$	$\frac{6}{8}$	$\frac{8}{25}$	$\frac{3}{4}$	$\frac{4}{8}$
$\frac{4}{16}$	$\frac{6}{20}$	$\frac{6}{24}$	$\frac{2}{6}$	$\frac{9}{12}$	$\frac{4}{16}$	$\frac{5}{10}$	$\frac{21}{27}$	$\frac{5}{40}$	$\frac{10}{24}$	$\frac{9}{20}$	$\frac{21}{35}$	$\frac{8}{20}$

Name _____ Date _____

Equal Values



Change the improper fractions in the top boxes to mixed numbers in their simplest form. Discover the answer to the question below by writing each word from the top set of boxes in the box below with the matching answer (the mixed number in its simplest form).

When the teacher asked for a sentence containing the word "avenue," what did one student say?

AND $\frac{4}{3} = 1\frac{1}{3}$	HAVE $\frac{12}{8} =$	IS $\frac{14}{12} =$	I'LL $\frac{11}{6} =$	BEST $\frac{8}{5} =$	MY $\frac{7}{4} =$
PUPPIES $\frac{14}{10} =$	TO $\frac{13}{9} =$	FRIEND'S $\frac{5}{2} =$	RETRIEVER $\frac{11}{5} =$	SOON $\frac{18}{14} =$	ABOUT $\frac{10}{8} =$
PLAY $\frac{10}{6} =$	GOLDEN $\frac{9}{8} =$	DOG $\frac{11}{4} =$	TO $\frac{10}{7} =$	WITH $\frac{13}{12} =$	AVENUE $\frac{12}{10} =$

$1\frac{3}{4}$	$1\frac{3}{5}$	$2\frac{1}{2}$	$2\frac{3}{4}$	$1\frac{1}{6}$	$1\frac{1}{4}$
$1\frac{3}{7}$	$1\frac{1}{2}$	$1\frac{2}{5}$	AND $1\frac{1}{3}$	$1\frac{2}{7}$	$1\frac{5}{6}$
$1\frac{1}{5}$	$1\frac{1}{8}$	$2\frac{1}{5}$	$1\frac{4}{9}$	$1\frac{2}{3}$	$1\frac{1}{12}$

Name _____ Date _____

Greater Than



Each row has three fractions that are greater in value than the fraction in the \blacktriangle . Find those fractions and circle them. Above each fraction you circle, you will see a number and a word. Write the word in the answer code box with the matching number.

When the teacher asked for a sentence containing the word "climate," what did one student say?

\blacktriangle $\frac{1}{3}$	9—THE $\frac{4}{9}$	5—ALL $\frac{3}{12}$	6—THE $\frac{6}{15}$	12—EXPERT $\frac{4}{18}$	12—WAS $\frac{3}{6}$	4—BLEW $\frac{5}{21}$
\blacktriangle $\frac{3}{5}$	18—SEEN $\frac{16}{30}$	16—WE $\frac{10}{15}$	16—NONE $\frac{14}{25}$	18—CLIMATE $\frac{7}{10}$	4—ARRIVED $\frac{13}{20}$	13—A $\frac{8}{15}$
\blacktriangle $\frac{1}{2}$	15—LIKE $\frac{3}{8}$	9—NIGHT $\frac{5}{14}$	13—SO $\frac{9}{16}$	11—IT $\frac{3}{4}$	2—COLD $\frac{5}{12}$	7—BASE $\frac{6}{10}$
\blacktriangle $\frac{4}{6}$	8—OF $\frac{14}{18}$	11—WE $\frac{15}{24}$	7—AND $\frac{1}{4}$	17—WE $\frac{3}{6}$	2—MY $\frac{9}{12}$	10—MOUNTAIN $\frac{21}{24}$
\blacktriangle $\frac{1}{4}$	6—DAY $\frac{1}{8}$	5—AT $\frac{5}{6}$	14—STEEP $\frac{4}{12}$	14—BUZZARD $\frac{5}{24}$	17—COULDN'T $\frac{6}{16}$	3—WINDS $\frac{6}{32}$
\blacktriangle $\frac{5}{8}$	3—GROUP $\frac{11}{16}$	10—LONG $\frac{3}{6}$	1—THE $\frac{1}{3}$	1—WHEN $\frac{16}{24}$	8—ALL $\frac{3}{6}$	15—THAT $\frac{21}{32}$

1	2	3	4	5	6
7	8	9 THE	10	11	12
13	14	15	16	17	18

Name _____ Date _____

Least to Greatest



In the problems below, the smallest fraction of a set appears in a \bigcirc followed by five fractions to the right of the \bigcirc . Write these remaining five fractions in order from least to greatest in the boxes below each set. Match the fraction that is in the shaded box with the answers under the code spaces at the bottom of the page. Write the word under each shaded box in the matching code space to reveal an answer to the riddle. The first one has been started for you.

How many schoolbooks can be put into an empty backpack?

1. $\bigcirc \frac{1}{12}$ $\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{6}$ $\frac{3}{8}$ $\frac{5}{12}$

LEAST	$\frac{1}{6}$	$\frac{1}{4}$				GREATEST
	the empty					

2. $\bigcirc \frac{1}{30}$ $\frac{2}{5}$ $\frac{3}{10}$ $\frac{2}{15}$ $\frac{5}{20}$ $\frac{1}{5}$

LEAST						GREATEST
	that					

3. $\bigcirc \frac{1}{2}$ $\frac{2}{3}$ $\frac{3}{4}$ $\frac{5}{8}$ $\frac{5}{6}$ $\frac{7}{12}$

LEAST						GREATEST
	bag		because			

4. $\bigcirc \frac{1}{7}$ $\frac{7}{14}$ $\frac{5}{7}$ $\frac{8}{28}$ $\frac{7}{7}$ $\frac{3}{7}$

LEAST						GREATEST
	not		only			

5. $\bigcirc \frac{1}{5}$ $\frac{4}{6}$ $\frac{4}{10}$ $\frac{4}{5}$ $\frac{7}{10}$ $\frac{13}{15}$

LEAST						GREATEST
	one		is			

6. $\bigcirc \frac{2}{4}$ $\frac{20}{32}$ $\frac{9}{16}$ $\frac{8}{8}$ $\frac{6}{8}$ $\frac{13}{16}$

LEAST						GREATEST
	after					

ANSWER

the

_____ .

$\frac{5}{7}$ $\frac{4}{6}$ $\frac{5}{6}$ $\frac{13}{16}$ $\frac{5}{20}$ $\frac{1}{4}$ $\frac{5}{8}$ $\frac{4}{5}$ $\frac{3}{7}$ $\frac{3}{8}$

Name _____ Date _____

What Did the Ocean Say to the Seashore?

Determine the LCD (least common denominator) for each pair of fractions. Using a ruler or a straightedge, draw a line from the fraction pair to the matching LCD. Your line will go through a number and a letter. The number tells you where to write the letter in the code below to answer the riddle.



LCD of

$\frac{2}{3}$ and $\frac{5}{6}$ •	• 12	
$\frac{3}{5}$ and $\frac{1}{3}$ •	• 28	T
$\frac{1}{2}$ and $\frac{2}{7}$ •	• 40	
$\frac{1}{4}$ and $\frac{1}{3}$ •	• 14	J
$\frac{2}{6}$ and $\frac{4}{9}$ •	• 10	A
$\frac{3}{4}$ and $\frac{6}{7}$ •	• 6	G
$\frac{2}{5}$ and $\frac{1}{2}$ •	• 18	
$\frac{3}{4}$ and $\frac{2}{5}$ •	• 20	O
$\frac{7}{8}$ and $\frac{3}{5}$ •	• 15	

W 3
D 6 10
N 14
E 7
15
2

LCD of

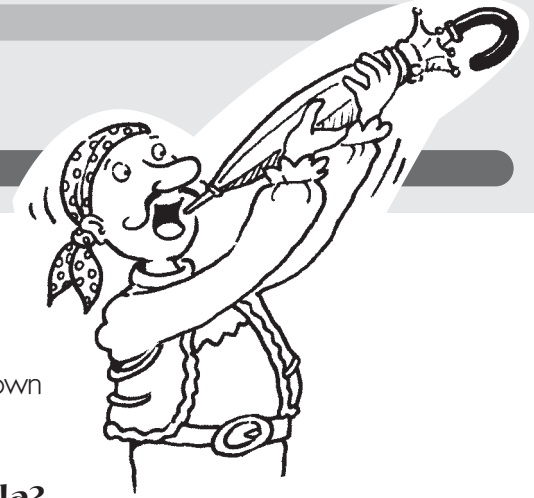
$\frac{6}{8}$ and $\frac{1}{2}$ •	• 16	S
$\frac{2}{3}$ and $\frac{5}{8}$ •	• 21	I
$\frac{7}{16}$ and $\frac{3}{4}$ •	• 36	V
$\frac{6}{7}$ and $\frac{4}{8}$ •	• 63	H
$\frac{4}{5}$ and $\frac{3}{6}$ •	• 56	T
$\frac{2}{3}$ and $\frac{4}{7}$ •	• 24	
$\frac{3}{7}$ and $\frac{6}{9}$ •	• 9	
$\frac{3}{4}$ and $\frac{5}{9}$ •	• 30	T
$\frac{1}{3}$ and $\frac{6}{9}$ •	• 8	

12
13
16
8
4
11
5
9

1	2	3	4	5	6	7	—	8	9
10	11	12	13	14 W	15	16	17	18	

Name _____ Date _____

Find the Match



Reduce all of the fractions on the left side of the page to their lowest terms. Find the exact match in the boxes on the right. When you have found the match, take the word from the left and write it in the box with the matching answer at the right. Reveal an answer to the following question by reading down column one and then down column two.

Why did the sword swallower swallow an umbrella?

HE $\frac{6}{9} = \frac{2}{3}$	RETIRING $\frac{12}{14} =$
PUT $\frac{6}{18} =$	WANTED $\frac{2}{8} =$
DAY $\frac{2}{12} =$	AWAY $\frac{15}{21} =$
A $\frac{14}{16} =$	SOON $\frac{6}{12} =$
WOULD $\frac{3}{27} =$	HE $\frac{10}{16} =$
FOR $\frac{9}{12} =$	KNEW $\frac{4}{20} =$
TO $\frac{8}{18} =$	RAINY $\frac{14}{18} =$
SOMETHING $\frac{8}{36} =$	BE $\frac{10}{12} =$
VERY $\frac{6}{10} =$	THAT $\frac{9}{21} =$
HE $\frac{10}{18} =$	SO $\frac{12}{32} =$

COLUMN ONE	COLUMN TWO
$\frac{5}{9}$	$\frac{2}{3}$ HE
$\frac{1}{5}$	$\frac{1}{4}$
$\frac{3}{7}$	$\frac{4}{9}$
$\frac{5}{8}$	$\frac{1}{3}$
$\frac{1}{9}$	$\frac{2}{9}$
$\frac{5}{6}$	$\frac{5}{7}$
$\frac{6}{7}$	$\frac{3}{4}$
$\frac{3}{5}$	$\frac{7}{8}$
$\frac{1}{2}$	$\frac{7}{9}$
$\frac{3}{8}$	$\frac{1}{6}$.

Name _____ Date _____

Did You Hear? Riddles

Did you hear ... about the construction worker's shirt collar? Never mind—

$\frac{5}{9}$	$\frac{1}{5}$	$\frac{1}{4}$	$\frac{1}{12}$	$\frac{7}{8}$	$\frac{5}{12}$	$\frac{5}{9}$	$\frac{1}{2}$	$\frac{5}{8}$					
$\frac{1}{5}$	$\frac{5}{9}$	$\frac{4}{9}$	$\frac{7}{8}$	$\frac{1}{3}$	S	$\frac{6}{7}$	$\frac{7}{8}$	$\frac{1}{4}$	$\frac{4}{9}$	$\frac{5}{9}$	$\frac{5}{8}$	$\frac{6}{7}$	S

... about the woman who swallowed a fish bone? Never mind—

$\frac{5}{9}$	$\frac{7}{8}$	$\frac{4}{9}$	$\frac{5}{8}$	$\frac{2}{3}$	$\frac{5}{12}$	$\frac{5}{12}$	$\frac{1}{3}$		
$\frac{2}{5}$	$\frac{5}{7}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{5}{8}$	S	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{7}{9}$	$\frac{3}{5}$

To decode these jokes, solve the addition and subtraction problems below, expressing answers in their simplest terms. Locate the answers in the code boxes under the riddles. Write the letter from each problem in the code box with the matching answer. If the answer appears in more than one code box, fill in each one with the same letter.

S = $\frac{2}{7} + \frac{4}{7} = \frac{6}{7}$	K = $\frac{8}{10} - \frac{3}{10} =$	T = $\frac{12}{16} + \frac{2}{16} =$
Y = $\frac{8}{12} - \frac{4}{12} =$	I = $\frac{3}{9} + \frac{2}{9} =$	C = $\frac{8}{10} - \frac{4}{10} =$
A = $\frac{5}{9} + \frac{1}{9} =$	U = $\frac{12}{18} + \frac{2}{18} =$	M = $\frac{4}{8} + \frac{2}{8} =$
O = $\frac{12}{16} - \frac{8}{16} =$	E = $\frac{15}{16} - \frac{5}{16} =$	R = $\frac{9}{9} - \frac{5}{9} =$
P = $\frac{6}{15} + \frac{3}{15} =$	N = $\frac{8}{12} - \frac{7}{12} =$	H = $\frac{5}{14} + \frac{5}{14} =$
L = $\frac{9}{12} - \frac{4}{12} =$		D = $\frac{5}{10} - \frac{3}{10} =$

Name _____ Date _____

Sticky Code



To decode this puzzle, complete all of the problems, expressing answers in their simplest terms. Locate the answers in the code boxes below. Write the letter from each problem in the code box with the matching answer. If the answer appears in more than one code box, fill in each one with the same letter.

What did one bottle of glue say to the other?

$\frac{9}{8} - (\frac{3}{8} + \frac{2}{8}) = \frac{4}{8} = \frac{1}{2} = \mathbf{R}$	$(\frac{10}{9} - \frac{4}{9}) + \frac{1}{9} =$	$= \mathbf{T}$
$(\frac{10}{12} - \frac{6}{12}) + \frac{6}{12} =$	$\frac{12}{15} - (\frac{5}{15} + \frac{4}{15}) =$	$= \mathbf{K}$
$\frac{3}{6} + (\frac{6}{6} - \frac{3}{6}) =$	$(\frac{7}{7} - \frac{3}{7}) + \frac{1}{7} =$	$= \mathbf{H}$
$(\frac{8}{9} - \frac{4}{9}) + \frac{2}{9} =$	$\frac{3}{10} + (\frac{9}{10} - \frac{3}{10}) =$	$= \mathbf{S}$
$\frac{9}{10} - (\frac{3}{10} + \frac{2}{10}) =$	$(\frac{10}{16} + \frac{4}{16}) - \frac{12}{16} =$	$= \mathbf{L}$
$(\frac{7}{8} - \frac{4}{8}) + \frac{3}{8} =$	$\frac{10}{12} - (\frac{7}{12} + \frac{2}{12}) =$	$= \mathbf{C}$
$\frac{10}{14} + (\frac{7}{14} - \frac{5}{14}) =$	$(\frac{13}{9} - \frac{7}{9}) + \frac{2}{9} =$	$= \mathbf{V}$
$(\frac{1}{8} + \frac{7}{8}) - \frac{3}{8} =$	$\frac{4}{15} + (\frac{14}{15} - \frac{9}{15}) =$	$= \mathbf{W}$

$\frac{3}{5}$	$\frac{3}{4}$

$\frac{3}{5}$	1	$\frac{1}{8}$	$\frac{1}{8}$

		R							
$\frac{1}{12}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{7}{9}$	$\frac{5}{6}$	1	$\frac{2}{3}$	$\frac{1}{8}$	$\frac{5}{8}$	

$\frac{5}{7}$	$\frac{5}{6}$	$\frac{8}{9}$	$\frac{3}{4}$

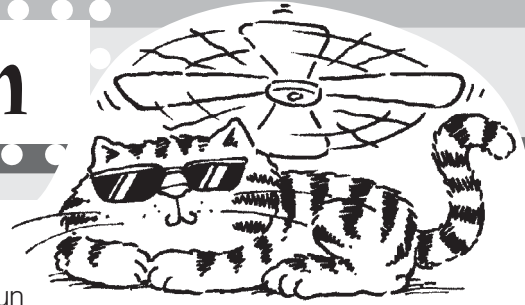
$\frac{7}{9}$	$\frac{6}{7}$

$\frac{9}{10}$	$\frac{7}{9}$	1	$\frac{1}{12}$	$\frac{1}{5}$

							R
$\frac{7}{9}$	$\frac{6}{7}$	$\frac{2}{5}$	$\frac{3}{4}$	$\frac{7}{9}$	$\frac{5}{7}$	$\frac{3}{4}$	$\frac{1}{2}$

Name _____ Date _____

Mixed Number Search



Solve the problems carefully, expressing all answers in simplest terms. Locate and cross out each of the correct answers in the grid. (Answers run horizontally across two or more boxes, left to right.) When you have finished, 24 boxes will remain. Write the remaining letters in order from left to right and top to bottom to reveal the answer to the following riddle.

Why did the cat sleep with the ceiling fan on?

$5 \frac{3}{8} + 7 \frac{2}{8} =$ $12 \frac{5}{8}$	$6 \frac{7}{9} - 2 \frac{4}{9} =$	$2 \frac{2}{3} + 2 \frac{2}{3} =$	$9 \frac{8}{12} - 4 \frac{1}{12} =$
$\begin{array}{r} 13 \frac{1}{4} \\ + 20 \frac{1}{4} \\ \hline \end{array}$	$\begin{array}{r} 12 \frac{8}{12} \\ - 4 \frac{6}{12} \\ \hline \end{array}$	$\begin{array}{r} 4 \frac{6}{8} \\ + 7 \frac{4}{8} \\ \hline \end{array}$	$\begin{array}{r} 24 \frac{9}{14} \\ - 11 \frac{5}{14} \\ \hline \end{array}$
$4 \frac{2}{6} + 8 \frac{2}{6} =$	$7 \frac{5}{7} - 2 \frac{4}{7} =$	$4 \frac{5}{10} + 3 \frac{3}{10} =$	$9 \frac{7}{8} - 2 \frac{3}{8} =$
$\begin{array}{r} 2 \frac{1}{3} \\ + 9 \frac{1}{3} \\ \hline \end{array}$	$\begin{array}{r} 14 \frac{9}{12} \\ - 3 \frac{3}{12} \\ \hline \end{array}$	$\begin{array}{r} 11 \frac{5}{8} \\ + 11 \frac{4}{8} \\ \hline \end{array}$	$\begin{array}{r} 7 \frac{4}{5} \\ - 2 \frac{3}{5} \\ \hline \end{array}$

H 3	G 5	D $\frac{1}{7}$	E 3	W 4	A $\frac{7}{11}$	N 4	T $\frac{1}{3}$
N 7	T 2	H 1	I 2	S $\frac{5}{8}$	S 2	H 3	I $\frac{1}{8}$
R 1	T 3	S $\frac{2}{7}$	E 4	D 3	B 1	O 2	Y $\frac{2}{3}$
T 3	O 9	B $\frac{9}{10}$	S 3	A 3	M $\frac{1}{2}$	E 7	A $\frac{1}{3}$
H 5	I $\frac{7}{12}$	V 3	S 5	T $\frac{2}{5}$	E 2	A 8	R $\frac{1}{6}$
R 2	Y 5	H 7	E $\frac{4}{5}$	C 9	O 1	U 1	L $\frac{2}{3}$
D 1	S 1	N $\frac{1}{2}$	O 8	W 1	I 2	N $\frac{1}{4}$	O 7
L 6	C 4	R 5	E $\frac{1}{3}$	A 3	T 3	E 7	D $\frac{1}{2}$

Name _____ Date _____

Why Couldn't the Great Houdini Ever Answer the Phone?

To answer the riddle, solve all of the problems, expressing answers in simplest terms. Locate your answers in the code boxes. Write the letter from each problem in the code box with the matching answer. If the answer appears in more than one code box, fill in each one with the same letter.



N $\frac{2}{3} + \frac{1}{4} =$ 11/12	L $\frac{2}{6} + \frac{3}{10} =$	C $\frac{4}{9} + \frac{2}{3} =$	E $\frac{3}{4} + \frac{2}{5} =$
A $\frac{4}{8} + \frac{10}{12} =$	D $\frac{4}{6} + \frac{1}{2} =$	H $\frac{2}{4} + \frac{3}{6} =$	W $\frac{2}{10} + \frac{6}{15} =$
Y $\frac{4}{5} + \frac{1}{3} =$	T $\frac{3}{5} + \frac{2}{10} =$	U $\frac{3}{4} + \frac{4}{8} =$	M $\frac{2}{9} + \frac{3}{6} =$
I $\frac{4}{8} + \frac{1}{3} =$	P $\frac{3}{7} + \frac{1}{2} =$	G $\frac{6}{15} + \frac{2}{3} =$	S $\frac{2}{4} + \frac{4}{10} =$

$\frac{4}{5}$	1	$1\frac{3}{20}$
---------------	----------	-----------------

$\frac{13}{18}$	$1\frac{1}{3}$	$1\frac{1}{15}$	$\frac{5}{6}$	$1\frac{1}{9}$	$\frac{5}{6}$	$1\frac{1}{3}$	N $\frac{11}{12}$
-----------------	----------------	-----------------	---------------	----------------	---------------	----------------	-----------------------------

$\frac{3}{5}$	$1\frac{1}{3}$	$\frac{9}{10}$
---------------	----------------	----------------

$1\frac{1}{3}$	$\frac{19}{30}$	$\frac{3}{5}$	$1\frac{1}{3}$	$1\frac{2}{15}$	$\frac{9}{10}$
----------------	-----------------	---------------	----------------	-----------------	----------------

$\frac{4}{5}$	$\frac{5}{6}$	$1\frac{3}{20}$	$1\frac{1}{6}$
---------------	---------------	-----------------	----------------

$1\frac{1}{4}$	$\frac{13}{14}$.
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Name _____ Date _____

Low-Grade Infection



Why did the boy's dad suffer from a low-grade infection?

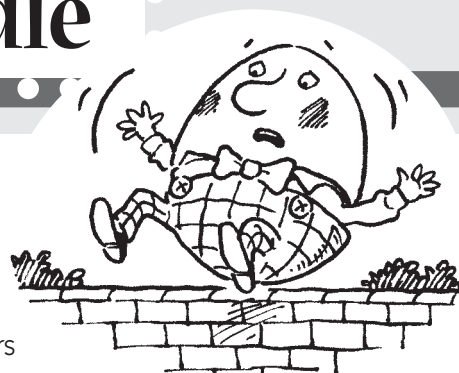
Solve these subtraction problems, expressing your answers in simplest terms. Match each answer from the top boxes with a fraction in the boxes below. Discover the answer to the riddle by writing each word from the top set of boxes in the box below with the matching answer.

<p>HE $\frac{5}{6}$ $-\frac{3}{8}$ <hr/></p>	<p>SAW $\frac{5}{6}$ $-\frac{5}{10}$ <hr/></p>	<p>FELT $\frac{2}{4}$ $-\frac{2}{5}$ <hr/></p>	<p>CARD $\frac{7}{8}$ $-\frac{2}{3}$ <hr/></p>
<p>HIS $\frac{2}{3} - \frac{2}{4} = \frac{1}{6}$</p>	<p>TO $\frac{8}{9} - \frac{1}{2} =$</p>	<p>ALWAYS $\frac{3}{4} - \frac{5}{10} =$</p>	<p>SICK $\frac{3}{5} - \frac{1}{3} =$</p>
<p>SCHOOL $\frac{4}{12}$ $-\frac{2}{8}$ <hr/></p>	<p>STOMACH $\frac{5}{6}$ $-\frac{1}{3}$ <hr/></p>	<p>SON'S $\frac{5}{8}$ $-\frac{2}{4}$ <hr/></p>	<p>TIME $\frac{7}{9}$ $-\frac{3}{4}$ <hr/></p>
<p>HE $\frac{4}{5} - \frac{3}{6} =$</p>	<p>HIS $\frac{14}{15} - \frac{4}{5} =$</p>	<p>EVERY $\frac{4}{6} - \frac{1}{4} =$</p>	<p>REPORT $\frac{7}{9} - \frac{2}{6} =$</p>

$\frac{5}{12}$	$\frac{1}{36}$	$\frac{3}{10}$	$\frac{1}{3}$
$\frac{2}{15}$	$\frac{1}{8}$	$\frac{1}{12}$	$\frac{4}{9}$
$\frac{5}{24}$	$\frac{11}{24}$	$\frac{1}{4}$	$\frac{1}{10}$
$\frac{4}{15}$	$\frac{7}{18}$	HIS $\frac{1}{6}$	$\frac{1}{2}$

Name _____ Date _____

Humpty Dumpty Riddle



Why did Humpty Dumpty have a great fall?

Solve all of the problems, remembering to express all answers in their lowest terms. Locate your answers in the boxes below. Write the letter from each problem in the code box with the matching answer. If the answer appears in more than one code box, fill in each one with the same letter.

G $4\frac{5}{12} - 2\frac{1}{6} = 2\frac{1}{4}$	A $3\frac{4}{5} + 4\frac{1}{2} =$	P $1\frac{1}{3} + 3\frac{4}{9} =$
F $\begin{array}{r} 8\frac{5}{6} \\ - 4\frac{1}{4} \\ \hline \end{array}$	I $\begin{array}{r} 2\frac{1}{4} \\ + 3\frac{1}{2} \\ \hline \end{array}$	N $\begin{array}{r} 6\frac{3}{4} \\ - 1\frac{1}{3} \\ \hline \end{array}$
U $3\frac{5}{6} + 2\frac{1}{5} =$	E $3\frac{6}{9} - 2\frac{1}{6} =$	K $4\frac{3}{5} + 2\frac{2}{3} =$
T $\begin{array}{r} 4\frac{4}{5} \\ - 1\frac{1}{10} \\ \hline \end{array}$	R $\begin{array}{r} 2\frac{3}{8} \\ + 2\frac{1}{3} \\ \hline \end{array}$	M $\begin{array}{r} 5\frac{7}{12} \\ - 1\frac{2}{4} \\ \hline \end{array}$
O $7\frac{2}{3} + 1\frac{3}{4} =$	L $5\frac{8}{9} - 4\frac{2}{3} =$	B $3\frac{1}{4} + 3\frac{1}{6} =$

$3\frac{7}{10}$	$9\frac{5}{12}$
-----------------	-----------------

$4\frac{1}{12}$	$8\frac{3}{10}$	$7\frac{4}{15}$	$1\frac{1}{2}$
-----------------	-----------------	-----------------	----------------

$6\frac{1}{30}$	$4\frac{7}{9}$
-----------------	----------------

$4\frac{7}{12}$	$9\frac{5}{12}$	$4\frac{17}{24}$
-----------------	-----------------	------------------

$8\frac{3}{10}$

$6\frac{5}{12}$	$9\frac{5}{12}$	$4\frac{17}{24}$	$5\frac{3}{4}$	$5\frac{5}{12}$	G $2\frac{1}{4}$
-----------------	-----------------	------------------	----------------	-----------------	----------------------------

$4\frac{7}{12}$	$8\frac{3}{10}$	$1\frac{2}{9}$	$1\frac{2}{9}$
-----------------	-----------------	----------------	----------------

Name _____ Date _____

What's His Reason?



In this activity you will be renaming a mixed number in order to create an improper fraction. Your purpose is to find the missing numerator or denominator. When you solve the problem, locate the answer in the code below. Write the letter from the problem above the answer in the code. If the answer appears in more than one box, fill in each one with the same letter.

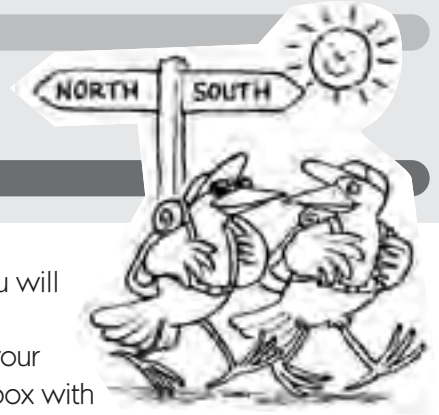
Why did the preschooler take his toy car to school?

$7\frac{1}{4} = 6\frac{A}{4}$ A =	$5\frac{5}{12} = 4\frac{17}{R}$ R =	$4\frac{1}{5} = 3\frac{0}{5}$ O =
$6\frac{1}{7} = 5\frac{S}{7}$ S =	$11\frac{3}{8} = 10\frac{D}{8}$ D =	$8\frac{7}{12} = 7\frac{T}{12}$ T =
$4\frac{2}{4} = 3\frac{6}{P}$ P =	$7\frac{2}{7} = 6\frac{C}{7}$ C =	$9\frac{6}{15} = 8\frac{U}{15}$ U =
$9\frac{4}{11} = 8\frac{B}{11}$ B = 15	$4\frac{3}{14} = 3\frac{H}{14}$ H =	$5\frac{5}{9} = 4\frac{Y}{9}$ Y =
$3\frac{5}{8} = 2\frac{V}{8}$ V =	$8\frac{3}{4} = 7\frac{I}{4}$ I =	$7\frac{7}{16} = 6\frac{L}{16}$ L =
$2\frac{3}{7} = 1\frac{E}{7}$ E =		$6\frac{4}{14} = 5\frac{W}{14}$ W =

19	17	10	23	7	19	19	23	10	B	6	14	8		
4	21	12	4	6	8	10	18	5	8	19	6			
11	12	7	13	10	17	7	8	19	10	5	9	17	10	12
21	4	19	17	10	18	5	23	23						

Name _____ Date _____

Let's Fly South



Be especially careful with the problems in this activity. In more than half of them, you will need to rename the mixed number as an improper fraction before you can subtract. When you solve the problems and express the answers in the lowest terms, locate your answers in the code boxes below. Write the letter from each problem in the code box with the matching answer. If the answer appears in more than one code box, fill in each one with the same letter.

Why do birds fly south for the winter?

U $5\frac{1}{6} - 2\frac{5}{6} = 2\frac{1}{3}$	G $12\frac{2}{9} - 7\frac{2}{3} =$	H $3\frac{7}{8} - 2\frac{5}{8} =$
E $\begin{array}{r} 8\frac{3}{8} \\ - 4\frac{7}{8} \\ \hline \end{array}$	C $\begin{array}{r} 17\frac{3}{4} \\ - 9\frac{3}{12} \\ \hline \end{array}$	W $\begin{array}{r} 5\frac{5}{6} \\ - 2\frac{2}{3} \\ \hline \end{array}$
O $7\frac{10}{12} - 3\frac{7}{12} =$	N $7\frac{1}{4} - 3\frac{3}{5} =$	D $10\frac{2}{8} - 7\frac{3}{4} =$
M $\begin{array}{r} 14\frac{2}{7} \\ - 8\frac{8}{14} \\ \hline \end{array}$	I $\begin{array}{r} 9\frac{1}{5} \\ - 2\frac{3}{5} \\ \hline \end{array}$	L $\begin{array}{r} 12\frac{2}{7} \\ - 9\frac{9}{14} \\ \hline \end{array}$
T $5\frac{1}{3} - 1\frac{3}{4} =$	A $11\frac{2}{5} - 3\frac{7}{10} =$	K $7\frac{1}{3} - 2\frac{2}{3} =$

$6\frac{3}{5}$	$3\frac{7}{12}$	$3\frac{1}{6}$	$4\frac{1}{4}$	U	$2\frac{1}{3}$	$2\frac{9}{14}$	$2\frac{1}{2}$	$3\frac{7}{12}$	$7\frac{7}{10}$	$4\frac{2}{3}$	$3\frac{1}{2}$
$3\frac{7}{12}$	$1\frac{1}{4}$	$3\frac{1}{2}$	$5\frac{5}{7}$	U	$5\frac{5}{7}$	$2\frac{1}{3}$	$8\frac{1}{2}$	$1\frac{1}{4}$	$3\frac{7}{12}$	$4\frac{1}{4}$	$4\frac{1}{4}$
$2\frac{9}{14}$	$4\frac{1}{4}$	$3\frac{13}{20}$	$4\frac{5}{9}$	$3\frac{7}{12}$	$4\frac{1}{4}$	$3\frac{1}{6}$	$7\frac{7}{10}$	$2\frac{9}{14}$	$4\frac{2}{3}$		

Name _____ Date _____

39 Errors



The multiplication grid contains 39 errors. Check all of the answers carefully. When you find a mistake, correct it, and shade in the box. When you have finished shading in the boxes with errors, you will reveal an answer to the following riddle.

What did the poodle say when it sat on some sandpaper?

X	1/2	4	1/9	1/5	1/7	8	3	1/6	1/3	9	5	1/4	2	1/10
1/4	1/8	4/4	1/36	1/20	1/28	8/4	3/4	1/24	1/16 1/12	4/5	4/5	1/16	2/4	1/40
1/3	1/6	4/3	1/27	1/15	3/7	8/3	1/9	1/18	1/12	9/3	5/3	1/12	2/3	1/30
1/8	1/15	8/4	1/64	1/40	8/7	8/8	1/24	1/48	1/21	8/9	5/8	4/8	8/2	10/8
1/2	1	4/2	2/9	1/10	2/7	8/2	1/6	1/12	1/4	9/2	5/2	2/4	2/2	1/20
1/6	1/8	6/4	1/48	1/30	1/36	8/6	1/18	1/36	1/9	9/6	5/6	4/6	6/2	1/60
1/5	1/7	5/4	1/45	1/25	1/30	5/8	1/15	1/30	1/15	9/5	5/5	4/5	2/5	1/50
7	2/7	28	9/7	7/5	7/7	56	21	7/6	7/3	63	35	4/7	14	7/10

Name _____ Date _____

Cross Them Out



Solve all of the problems below, remembering to express all answers in the lowest terms. Locate and cross out each of the correct answers in the grid. (Answers run horizontally, left to right.) When you have finished, 27 boxes will remain. Write the remaining letters in order from left to right and top to bottom to reveal the answer to the following riddle.

What happens to a rabbit when it gets very angry?

$3\frac{1}{4} \times 2\frac{2}{5} = 7\frac{4}{5}$	$1\frac{6}{8} \times 3\frac{1}{5} =$	$3\frac{1}{6} \times 2\frac{2}{5} =$	$4\frac{1}{3} \times 1\frac{1}{8} =$
$4\frac{1}{2} \times 2\frac{2}{3} =$	$6\frac{2}{3} \times 4\frac{1}{4} =$	$4\frac{2}{3} \times 3\frac{3}{7} =$	$5\frac{1}{4} \times 2\frac{3}{7} =$
$3\frac{1}{3} \times 2\frac{1}{5} =$	$4\frac{1}{5} \times 2\frac{1}{3} =$	$3\frac{3}{4} \times 2\frac{4}{5} =$	$5 \times 2\frac{1}{2} =$
$8 \times 6\frac{1}{2} =$	$4\frac{1}{5} \times 1\frac{4}{7} =$	$6\frac{2}{3} \times 1\frac{3}{5} =$	$2\frac{2}{4} \times 1\frac{2}{4} =$

T 1	A 7	K $\frac{3}{5}$	H 2	U 1	N 0	D $\frac{2}{3}$	E 2
R 1	T 2	H $\frac{3}{4}$	B 2	I 7	D $\frac{1}{3}$	U 4	N 4
N 1	T 5	O $\frac{3}{5}$	Y 2	R 2	E $\frac{1}{4}$	H 6	E $\frac{3}{5}$
T 2	H 8	E $\frac{1}{3}$	R 1	R 0	E $\frac{1}{2}$	A 4	L $\frac{1}{3}$
L 2	B 7	O $\frac{4}{5}$	Y 1	T 9	R $\frac{4}{5}$	G 7	E $\frac{1}{6}$
T 9	S $\frac{1}{4}$	P 1	K 2	H $\frac{8}{9}$	B 1	R 6	O $\frac{2}{4}$
P 1	R 4	O $\frac{7}{8}$	P 8	I $\frac{3}{4}$	B 1	A 2	R $\frac{1}{2}$
N 2	M $\frac{5}{8}$	G 3	L $\frac{3}{4}$	A 3	D $\frac{5}{7}$	E 5	N 2

Gone Fishing



Why couldn't Batman go bass fishing?

Solve all of the problems, expressing answers in simplest terms. Locate your answers in the code boxes. Write the letter from each problem in the code box with the matching answer. If the answer appears in more than one code box, fill in each one with the same letter.

E = $\frac{6}{8} \div \frac{3}{6} =$

D = $\frac{1}{2} \div \frac{3}{4} =$

B = $\frac{3}{4} \div \frac{9}{12} =$

S = $4 \div \frac{8}{10} =$

F = $\frac{2}{3} \div \frac{4}{12} =$

O = $7 \div \frac{14}{15} =$

N = $\frac{4}{5} \div \frac{2}{3} =$

H = $\frac{5}{6} \div \frac{7}{12} =$

I = $\frac{4}{6} \div \frac{2}{5} =$

T = $\frac{1}{4} \div \frac{8}{12} =$

M = $5 \div \frac{1}{3} =$

A = $\frac{3}{8} \div \frac{6}{2} =$

W = $\frac{7}{8} \div \frac{3}{12} =$

R = $\frac{3}{5} \div \frac{3}{9} =$

L = $\frac{5}{9} \div \frac{3}{18} =$

$1\frac{3}{7}$	$1\frac{2}{3}$	5
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$3\frac{1}{3}$	$1\frac{2}{3}$	$\frac{3}{8}$	$\frac{3}{8}$	$3\frac{1}{3}$	$1\frac{1}{2}$
----------------	----------------	---------------	---------------	----------------	----------------

2	$1\frac{4}{5}$	$1\frac{2}{3}$	$1\frac{1}{2}$	$1\frac{1}{5}$	$\frac{2}{3}$
---	----------------	----------------	----------------	----------------	---------------

$1\frac{4}{5}$	$7\frac{1}{2}$	1	$1\frac{2}{3}$	$1\frac{1}{5}$
----------------	----------------	---	----------------	----------------

$\frac{1}{8}$	$\frac{3}{8}$	$1\frac{1}{2}$
---------------	---------------	----------------

$\frac{1}{8}$	$3\frac{1}{3}$	$3\frac{1}{3}$
---------------	----------------	----------------

$\frac{3}{8}$	$1\frac{3}{7}$	$1\frac{1}{2}$
---------------	----------------	----------------

$3\frac{1}{2}$	$7\frac{1}{2}$	$1\frac{4}{5}$	15	5
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Name _____ Date _____

Tic-Tac-Toe #1



Solve all of the problems. If your answer is a **whole number**, give that space an **X**, but if your answer is a **mixed number**, give it an **O**. Any three **Xs** or **O**s in a straight line wins.

$$8 \frac{2}{3} \div 2 \frac{2}{6} = 3 \frac{5}{7}$$

O

$$5 \frac{1}{6} \div 4 \frac{2}{3} =$$

$$3 \frac{3}{4} \div 1 \frac{2}{8} =$$

$$4 \frac{2}{4} \div 2 \frac{1}{4} =$$

$$5 \frac{2}{5} \div 1 \frac{4}{5} =$$

$$4 \frac{2}{8} \div 3 \frac{2}{4} =$$

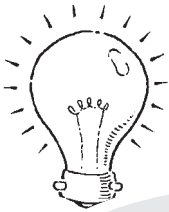
$$3 \frac{3}{9} \div 2 \frac{4}{12} =$$

$$7 \frac{1}{2} \div 3 \frac{3}{5} =$$

$$6 \frac{2}{8} \div 3 \frac{1}{3} =$$

Name _____ Date _____

Tips for Adding, Subtracting, Multiplying, and Dividing Decimals



To ADD or SUBTRACT Decimals

Take $5.34 + 22.6 + 345.427 + 22 =$ _____

Hint

If your place values are not aligned when you add or subtract with decimals, you'll get the wrong answer!

$$\begin{array}{r}
 5.34 \\
 22.6 \\
 345.427 \\
 + 22 \\
 \hline
 \end{array}$$

Line up the decimal points of each number when you write the problem vertically.

$$\begin{array}{r}
 5.340 \\
 22.600 \\
 345.427 \\
 + 22.000 \\
 \hline
 395.367
 \end{array}$$

Add zeros to act as placeholders. Use a decimal point if you add zeros to whole numbers.

Bring the decimal point down in your answer.



To MULTIPLY Decimals

Take $5.63 \times 4.6 =$ _____ Set up the problem and multiply as you would with whole numbers.

$$\begin{array}{r}
 5.63 \\
 \times 4.6 \\
 \hline
 25.898
 \end{array}$$

2 decimal places } Count the number of decimal places in the question.
 1 decimal place } All together there are 3 decimal places.
 Show the same number of places in the answer (3 decimal places).



To DIVIDE Decimals

When you divide, your divisor must be a whole number. If the dividend has a decimal, place a decimal point directly above the decimal point in the answer. Divide to solve the problem.

Take $1.5 \div 3 =$ _____ $3 \overline{) 1.5}$ The dividend has a decimal.

$$\begin{array}{r}
 0.5 \\
 3 \overline{) 1.5}
 \end{array}$$

Place a decimal point in your answer directly above the decimal point in the dividend.

If the divisor has a decimal, change it to a whole number by moving the decimal point to the right. Count the number of spaces you moved it.

$$\begin{array}{r}
 0.3 \overline{) 1.5}
 \end{array}$$

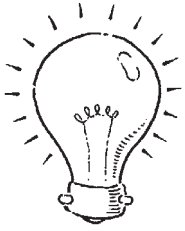
Move the decimal one place to the right to make 0.3 a whole number. Then adjust the dividend by moving the decimal to the right the same number of spaces.

$$\begin{array}{r}
 5.0 \\
 3 \overline{) 15.0}
 \end{array}$$

Now you can divide, noting the new position of the decimal point in your answer.

Name _____ Date _____

Tips for Converting Fractions to Decimals



To CONVERT Fractions to Decimals

If you're working with a fraction with the denominator 10, 100, or 1000:

$$\frac{7}{10} = .7 \quad \text{1 decimal place (tenths)}$$

$$\frac{12}{100} = .12 \quad \text{2 decimal places (hundredths)}$$

$$\frac{374}{1000} = .374 \quad \text{3 decimal places (thousandths)}$$

1. Count the number of zeros in the denominator.
2. Use the number of zeros you counted to show the number of decimal places you'll need in your answer.

BUT if the denominator is **not** 10, 100, or 1000 (or any multiple of 10), create equivalent fractions that show tenths, hundredths, or thousandths.

Tenths

$$\frac{2}{5} = \frac{4}{10} = .4$$

Here, 5 is a factor of 10.
Create an equivalent fraction with tenths.

Hundredths

$$\frac{3}{4} = \frac{75}{100} = .75$$

Here, 4 is a factor of 100.
Create an equivalent fraction with hundredths.

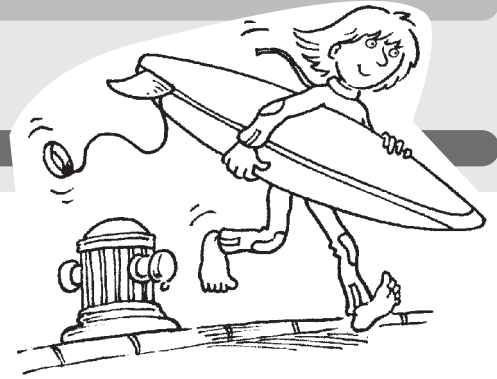
Thousandths

$$\frac{1}{8} = \frac{125}{1000} = .125$$

Here, 8 is a factor of 1000.
Create an equivalent fraction with thousandths.

Name _____ Date _____

Surfer Boy



Why did the surfer boy hurry across the busy street?

Add each problem carefully and find your answers in the code boxes below. Write the letter from each problem in the code box with the matching answer. If the answer appears in more than one code box, fill in each one with the same letter.

Y $\begin{array}{r} 34.00 \\ 694.37 \\ + 381.50 \\ \hline 1,109.87 \end{array}$	E $\begin{array}{r} 87 \\ + 6.394 \\ \hline \end{array}$	I $\begin{array}{r} 3.82 \\ + .397 \\ \hline \end{array}$	A $\begin{array}{r} .936 \\ .247 \\ + .663 \\ \hline \end{array}$
R $\begin{array}{r} 58.3 \\ + 247.69 \\ \hline \end{array}$	L $\begin{array}{r} 37.643 \\ 49 \\ + 65 \\ \hline \end{array}$	W $\begin{array}{r} 375.2 \\ 24.38 \\ + 4.547 \\ \hline \end{array}$	P $\begin{array}{r} 2.45 \\ 3.94 \\ + 8.07 \\ \hline \end{array}$
G $\begin{array}{r} 83.64 \\ 3.9 \\ + 78.06 \\ \hline \end{array}$	N $\begin{array}{r} 4.846 \\ + .349 \\ \hline \end{array}$	M $\begin{array}{r} 39.007 \\ 4.8 \\ + 24.09 \\ \hline \end{array}$	S $\begin{array}{r} 24.6 \\ 36.9 \\ + 55 \\ \hline \end{array}$
O $\begin{array}{r} 293.4 \\ 4.57 \\ + 62.069 \\ \hline \end{array}$	D $\begin{array}{r} 923.76 \\ 7.694 \\ + .801 \\ \hline \end{array}$	H $\begin{array}{r} 73.52 \\ + 6.381 \\ \hline \end{array}$	T $\begin{array}{r} 49.36 \\ 74.21 \\ + 81.32 \\ \hline \end{array}$

79.901	93.394	116.5	4.217	67.897	14.46	151.643	Y 1109.87	
404.127	1.846	5.195	204.89	93.394	932.255	204.89	360.039	
165.60	93.394	204.89	204.89	360.039	204.89	79.901	93.394	
360.039	204.89	79.901	93.394	305.99	204.89	4.217	932.255	93.394

Name _____ Date _____

Crack the Code #1



What bad news did the ringmaster at the circus convey to the audience?

Solve each of the addition problems carefully. (Problems that are written horizontally can be rewritten vertically.) Match your answer with the correct answer in the code box. When you find that match, write the word from the question box above the answer.

<p>BUT</p> $56.4 + 3.37 + 8.335 =$ <p>68.105</p>	<p>HERE</p> $\begin{array}{r} 24.79 \\ 3.6 \\ + 6.824 \\ \hline \end{array}$	<p>MAN</p> $79.0 + 3.94 + 68.36 =$	<p>BE</p> $\begin{array}{r} 724.1 \\ 4.932 \\ + 84 \\ \hline \end{array}$
<p>SEEN</p> $\begin{array}{r} 32.71 \\ .769 \\ + 734 \\ \hline \end{array}$	<p>TONIGHT</p> $487.8 + 8.8 + 63.42 =$	<p>APOLOGIZE</p> $\begin{array}{r} 24 \\ .71 \\ + 7.1 \\ \hline \end{array}$	<p>MUST</p> $97.8 + 4.838 + 53.9 =$
<p>INVISIBLE</p> $38.6 + 3.86 + .386 =$	<p>WE</p> $\begin{array}{r} 78.29 \\ 3.7 \\ + .638 \\ \hline \end{array}$	<p>WON'T</p> $47.2 + 3.94 + 456.8 =$	<p>THE</p> $\begin{array}{r} 59.846 \\ 2.3 \\ + 3.71 \\ \hline \end{array}$

82.628	156.538	31.81	BUT 68.105
65.856	42.846	151.30	507.94
813.032	767.479	35.214	560.02

Name _____ Date _____

Let's Play Bingo



Solve the problems below and locate your answers in the bingo grid. (The problems that are written horizontally can be rewritten vertically.) Circle the answers you find in the grid. Any five answers in a line horizontally, vertically, or diagonally is a BINGO.

$\begin{array}{r} 13.084 \\ - .078 \\ \hline 13.006 \end{array}$	$48 - 44.394 =$	$\begin{array}{r} 5.8 \\ - 3.9 \\ \hline \end{array}$	$2.9 - 1.13 =$	$\begin{array}{r} 47.62 \\ - 31.74 \\ \hline \end{array}$
$17.9 - 3.7 =$	$\begin{array}{r} 58.09 \\ - 3.84 \\ \hline \end{array}$	$\begin{array}{r} 16.24 \\ - 4.977 \\ \hline \end{array}$	$5 - 1.33 =$	$92.4 - 6.9 =$
$\begin{array}{r} 36.5 \\ - 24.055 \\ \hline \end{array}$	$3.6 - 1.43 =$	$77.8 - 24.3 =$	$\begin{array}{r} 94.7 \\ - 3.9 \\ \hline \end{array}$	$26.3 - 15.8 =$

B I N G O				
15.88	2.47	54.25	79.8	1.9
12.445	64.28	28.7	11.263	85.5
34.75	2.629	90.8	47.2	3.606
2.17	1.77	14.2	10.5	3.67
6.08	53.5	33.74	13.006	6.15

Name _____

Date _____

What's the Difference?



What's the difference between school teachers and train engineers?

To answer the riddle, solve each of the problems below. Match your answer with the correct answer in the code box. Write the word from the problem above the matching answer in the code box.

<p>THE</p> $\begin{array}{r} 247.06 \\ - 49.73 \\ \hline 197.33 \end{array}$	<p>THE</p> $\begin{array}{r} 389.435 \\ - 27.778 \\ \hline \end{array}$	<p>THE</p> $\begin{array}{r} 901.35 \\ - 3.244 \\ \hline \end{array}$	<p>MIND</p> $\begin{array}{r} 800 \\ - 2.45 \\ \hline \end{array}$
<p>TEACHERS</p> $\begin{array}{r} 374.94 \\ - 23.77 \\ \hline \end{array}$	<p>WHILE</p> $\begin{array}{r} 45.693 \\ - 42.848 \\ \hline \end{array}$	<p>ENGINEERS</p> $\begin{array}{r} 82.34 \\ - 4.55 \\ \hline \end{array}$	<p>MIND</p> $\begin{array}{r} 800.5 \\ - 157.8 \\ \hline \end{array}$
<p>SCHOOL</p> $\begin{array}{r} 34.757 \\ - 24.798 \\ \hline \end{array}$	<p>TRAIN</p> $\begin{array}{r} 444.55 \\ - 39.39 \\ \hline \end{array}$	<p>TRAIN</p> $\begin{array}{r} 914.34 \\ - 29.86 \\ \hline \end{array}$	<p>TRAIN</p> $\begin{array}{r} 63.4 \\ - 48.345 \\ \hline \end{array}$

9.959	351.17	15.055	361.657	642.7	2.845
-------	--------	--------	---------	-------	-------

THE					
197.33	884.48	77.79	797.55	898.106	405.16

Name _____ Date _____

Shapely Math

Study the shapes in equations 1–6. Each shape has only one match in the number grids at the right. Use the shapes to fill in the missing numbers in the equations. Solve each number sentence. Check your answers against the scrambled answers below.

27.2	3.06	24.3
0.83	86	6.33
64.1	5.5	4.07

	2.46	
17.6		6.1
2.4	43	3.64
	14.9	7.3
	3.07	

1. (86 + 7.3) - (43 + 6.33) = _____

2. (+) - (+) = _____

3. (+) - (+) = _____

4. (+) - (+) = _____

5. (+) - (+) = _____

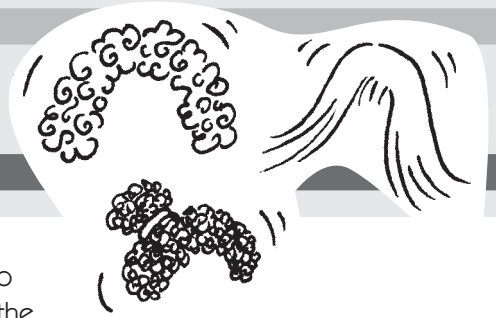
6. (+) - (+) = _____

ANSWER BOX

24.37	4.9	43.97
39.19	43.06	8.33
34.67	9.17	10.27

Name _____ Date _____

Equal Values

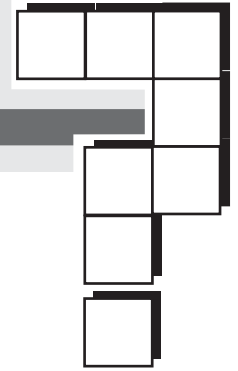


Solve the problems in both sets of boxes. Then match each answer in the top boxes to an equivalent answer in the bottom boxes. Discover the answer to the question by writing each word from the top set of boxes in the box below with the matching answer.

What kind of hair styles would invisible people have?

QUITE $\begin{array}{r} 4.340 \\ + .672 \\ \hline 5.012 \end{array}$	BUT $\begin{array}{r} .749 \\ - .109 \\ \hline \end{array}$	AT $\begin{array}{r} 37.42 \\ + 7.008 \\ \hline \end{array}$	NOT $5.8 + 7.23 + 4.47 =$
TO $34.77 - 24.89 =$	THEY $\begin{array}{r} 24.36 \\ + 9.042 \\ \hline \end{array}$	SURE $\begin{array}{r} 14.008 \\ - 6.094 \\ \hline \end{array}$	I'M $16.2 + 8.77 + 5 =$
I'M $\begin{array}{r} 256.8 \\ - 47.7 \\ \hline \end{array}$	MUCH $34.82 + 17.5 + 3.2 =$	THAT $46.34 - 7.88 =$	EXACTLY $\begin{array}{r} .834 \\ + 17.608 \\ \hline \end{array}$
BE $4.02 + 7.8 + 23.8 =$	WOULDN'T $\begin{array}{r} 94.05 \\ - 36.23 \\ \hline \end{array}$	CERTAIN $4.05 + 3.82 + 1.25 =$	LOOK $\begin{array}{r} 4.391 \\ - 2.477 \\ \hline \end{array}$
$44.95 - 14.98 =$	$\begin{array}{r} 26.8 \\ - 9.3 \\ \hline \end{array}$	$\begin{array}{r} 34.008 \\ - 15.566 \\ \hline \end{array}$	$6.507 + 1.407 =$
$\begin{array}{r} .456 \\ + .184 \\ \hline \end{array}$	$\begin{array}{r} 145.6 \\ + 63.5 \\ \hline \end{array}$	$\begin{array}{r} 8.446 \\ - 3.434 \\ \hline 5.012 \end{array}$	$24.09 - 14.97 =$
$19.04 + 2.2 + 17.22 =$	$\begin{array}{r} 48.751 \\ - 15.349 \\ \hline \end{array}$	$\begin{array}{r} 4.94 \\ + 52.88 \\ \hline \end{array}$	$\begin{array}{r} 40.84 \\ - 5.22 \\ \hline \end{array}$
$\begin{array}{r} 60.93 \\ - 5.41 \\ \hline \end{array}$	$6.04 + 3.84 =$	$.56 + .008 + 1.346 =$	$\begin{array}{r} 56.609 \\ - 12.181 \\ \hline \end{array}$

Cross-Number Puzzle



Solve each of the multiplication problems carefully and write your answers in the correct across or down spaces in the cross-number puzzle. Each decimal point should be placed in the appropriate mini-box.

ACROSS

1.
$$\begin{array}{r} 4.38 \\ \times 3 \\ \hline \end{array}$$

13.14

5.
$$\begin{array}{r} 6931 \\ \times 0.5 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 4377 \\ \times 0.5 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 9.436 \\ \times 7 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 369 \\ \times 2.2 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 56.06 \\ \times 6 \\ \hline \end{array}$$

DOWN

1.
$$\begin{array}{r} 458 \\ \times 0.41 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 6.41 \\ \times 72 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 39.72 \\ \times 3 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 38.4 \\ \times 9 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 857 \\ \times 6.7 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 7.34 \\ \times 9 \\ \hline \end{array}$$

The grid contains the following numbered starting points:

- Across:** 1 (top row, 2nd square), 3 (top row, 4th square), 5 (middle row, 5th square), 7 (middle row, 7th square), 9 (middle row, 9th square), 10 (bottom row, 1st square).
- Down:** 1 (top row, 2nd square), 2 (top row, 4th square), 3 (middle row, 1st square), 4 (middle row, 2nd square), 6 (middle row, 5th square), 7 (middle row, 7th square), 8 (middle row, 9th square), 10 (bottom row, 1st square).

Name _____ Date _____

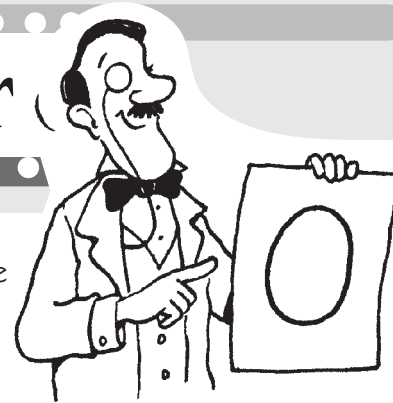
Question and Answer

Solve all of the problems in the top set of boxes. Each answer in the top boxes matches an answer in the bottom boxes. Discover the question and answer by writing each word from the top set of boxes in the box below with the matching answer.

<p>MAKE</p> $\begin{array}{r} 5.78 \\ \times 4.3 \\ \hline 24.854 \end{array}$	<p>KNOW</p> $\begin{array}{r} 23.7 \\ \times 6.9 \\ \hline \end{array}$	<p>THESE</p> $\begin{array}{r} 94.26 \\ \times 0.3 \\ \hline \end{array}$	<p>THRIFTY</p> $\begin{array}{r} 55.55 \\ \times 0.5 \\ \hline \end{array}$
<p>MEET</p> 47.3×0.26	<p>BOTH</p> 8.43×4.6	<p>HOW</p> 3.009×8	<p>CONTORTIONISTS</p> 76.3×63
<p>TO</p> $\begin{array}{r} 83.7 \\ \times 7.7 \\ \hline \end{array}$	<p>CERTAINLY</p> $\begin{array}{r} 6.38 \\ \times 4.9 \\ \hline \end{array}$	<p>LIKE</p> $\begin{array}{r} 5.22 \\ \times 7.3 \\ \hline \end{array}$	<p>ENDS</p> $\begin{array}{r} 600 \\ \times 4.8 \\ \hline \end{array}$
<p>PEOPLE</p> 96.4×3.9	<p>HOW</p> 83.5×68	<p>PEOPLE</p> 60.9×5.9	<p>ARE</p> 58.31×4.2

24.072	244.902	4,806.9	38.106
27.775	359.31	28.278	375.96
31.262	163.53	5,678	644.49
Make	38.778	2880	!
24.854	38.778	2880	12.298

Last Number-First Number



Solve the following multiplication problems. Write your answers in the winding puzzle below. Note: The last digit of each answer becomes the first digit of the next answer. Remember to include the decimal in the appropriate mini-box. Be sure to follow the arrows as you fill in the boxes, because you will have to write the following answers backward: 5, 6, 7, 8, 11, and 12. Then, use the numbers you've written in the shaded boxes to place the letters in the code at the bottom and answer this question:

Name the fictional Englishman who discovered the circle.

1. $\begin{array}{r} 5.63 \\ \times 2.4 \\ \hline 13.512 \end{array}$	2. $\begin{array}{r} 43.7 \\ \times 5.8 \\ \hline \end{array}$	3. $\begin{array}{r} 7.68 \\ \times 82 \\ \hline \end{array}$	4. $\begin{array}{r} .671 \\ \times 94 \\ \hline \end{array}$	5. $\begin{array}{r} 6.37 \\ \times 7.5 \\ \hline \end{array}$	6. $\begin{array}{r} 96.9 \\ \times 5.4 \\ \hline \end{array}$
---	--	---	---	--	--

7. $\begin{array}{r} 78.1 \\ \times .83 \\ \hline \end{array}$	8. $\begin{array}{r} 94.2 \\ \times 3.7 \\ \hline \end{array}$	9. $\begin{array}{r} 4.83 \\ \times 93 \\ \hline \end{array}$	10. $\begin{array}{r} 98.4 \\ \times .97 \\ \hline \end{array}$	11. $\begin{array}{r} 9.73 \\ \times 86 \\ \hline \end{array}$	12. $\begin{array}{r} 87.7 \\ \times 9.4 \\ \hline \end{array}$
--	--	---	---	--	---

1	1	3	5	1	2	2				3
□	□	□	●	□	C	□	□	□	□	□
▶▶▶▶										
		9		F				10		C
		□		□				□		□
		▶▶▶▶						▶▶▶▶		E
8										4
□										□
										M
										□
			12			R		11		E
			□			□		□		□
			▶▶▶▶					◀◀◀◀		
7										5
□										□
			U					E		
			□					□		□
					6					
					□					

Sir

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

Name _____ Date _____

Crack the Code #2



Complete each of the multiplication problems carefully. Write each letter from the top boxes in the box below with the matching answer. The shaded and unshaded areas make up the words that answer this riddle:

When the little girl's father encouraged her to study so she could get ahead, what did she say?

I 3.6×0.1	D 10×74.4	A 0.001×8.6	E 0.56×100	A 47×0.001
D $1,000 \times 84$	R 4.32×0.01	D 7.41×0.001	U 0.1×0.1	A 16.3×0.01
A 0.001×0.428	E 7.53×10	Y $3.12 \times 1,000$	H $12,121 \times 0.01$	A 0.001×48
E 95.6×0.1	Y 100×4.624	B 392×0.01	L 7.91×0.01	D 38.42×100
T 10×54.63	A 24.8×0.01	V 0.001×0.005	H 7.72×0.1	D 9.732×10

3.92	0.01	546.30	744.0	0.047
84,000	3,842.00	3,120.00	I 0.36	0.163
0.0791	0.0432	9.56	0.248	97.320
462.400	0.772	0.000428	0.000005	56.00
0.0086	121.21	75.30	0.048	0.00741

_____, _____

 _____!

Name _____ Date _____

Tic-Tac-Toe #2



Complete all of the division problems. If your answer **does not have a remainder**, give that space an **X**, but if your answer does have a remainder, give it an **O**. Any three **Xs** or **O's** in a straight line wins.

$$\begin{array}{r} 6.25 \\ 7 \overline{) 43.75} \end{array}$$

$$8 \overline{) 5.328}$$

$$4 \overline{) 376.7}$$

X

$$6 \overline{) 29.34}$$

$$6 \overline{) 20.09}$$

$$5 \overline{) 47.20}$$

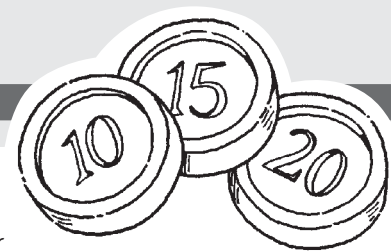
$$8 \overline{) 17.85}$$

$$9 \overline{) 804.6}$$

$$7 \overline{) 237.3}$$

Name _____ Date _____

Division Bingo



Solve the problems below and locate your answer in the bingo grid. Circle the answers you find in the grid. Any five answers in a line horizontally, vertically, or diagonally is a BINGO.

$215.75 \div 2.5$ 86.3	$334.64 \div 4.7$	$2.184 \div 0.56$	$1.7712 \div 4.8$
$44.148 \div 7.8$	$0.19414 \div 0.34$	$413.66 \div 4.3$	$591.79 \div 8.3$
$41.478 \div 0.93$	$24.948 \div 6.6$	$1.2738 \div 0.22$	$84.96 \div 1.2$

B I N G O				
71.2	6.38	5.55	3.78	71.82
4.9	96.2	4.35	5.79	.369
5.66	3.9	.571	86.3	7.67
81.6	77.7	4.363	71.3	5.94
44.6	3.934	2.8	70.8	76.72

Name _____ Date _____

Decimal Fun



Solve each problem by working from left to right. When you finish a problem, locate the answer in a box below, then write the word above the answer.

- Take 6.34 → Add 0.36 → Multiply by 34 → Subtract 4.02 = **223.78** = STILL
- Take 37.2 → Multiply by 8.8 → Subtract 7.08 → Add 35.22 = _____ = AND
- Take 84.55 → Divide by 5 → Add 6.81 → Subtract 4.63 = _____ = SECOND
- Take 99.03 → Subtract 48.8 → Multiply by 9.6 → Add 42.7 = _____ = WAS
- Take 0.945 → Add 99.45 → Multiply by 5 → Subtract 246 = _____ = A
- Take 981.9 → Divide by 9 → Add 64.9 → Multiply by 3.3 = _____ = YELPING
- Take 7.73 → Multiply by 9.6 → Subtract 71.008 → Add 94.7 = _____ = THE
- Take 39.90 → Subtract 2.58 → Multiply by 6 → Add 34.2 = _____ = WANTED
- Take 44.44 → Add 4.04 → Multiply by 4.4 → Subtract 4.004 = _____ = PUPPY
- Take 9.06 → Multiply by 60.9 → Add 3.42 → Subtract 93.76 = _____ = HUNGRY

Why did the puppy start to bark after eating his dinner?

			STILL	
97.9	209.308	524.908	223.78	461.414
355.5	258.12	255.975	19.09	574.2

Name _____ Date _____

Follow the Arrows

Begin at the ☆. Solve the division problem and write your answer in the box directly above the problem. Follow the arrow to the next box and copy your answer from the first box. Solve the next problem, follow the arrow, and copy your new answer in the next open box. Continue to solve the problems, copying each answer into the next box indicated by the arrow. When you've finished the puzzle correctly, your final answer should be the exact number needed to solve the final problem. Go on to the second puzzle and follow the same steps you used to work your way through the first one!

☆
$$\begin{array}{r} \boxed{} \\ 3.9 \overline{) 37.791} \end{array}$$
 \rightarrow
$$\begin{array}{r} \boxed{} \\ \times 0.8 \\ \hline \boxed{} \end{array}$$
 \rightarrow
$$\begin{array}{r} \boxed{} \\ + 18.47 \\ \hline \boxed{} \end{array}$$

$$\begin{array}{r} \boxed{} \\ 2 \overline{) \boxed{}} \end{array}$$
 \rightarrow
$$\begin{array}{r} \boxed{} \\ - 9.5 \\ \hline \boxed{} \end{array}$$
 \rightarrow
$$\begin{array}{r} \boxed{} \\ \times 4.5 \\ \hline \boxed{16.2495} \end{array}$$

☆
$$\begin{array}{r} 8.6 \\ 38.24 \\ 4.392 \\ + 447.365 \\ \hline \boxed{} \end{array}$$
 \rightarrow
$$\begin{array}{r} \boxed{} \\ \hline \boxed{} \\ .03 \overline{) } \end{array}$$
 \rightarrow
$$\begin{array}{r} \boxed{} \\ - 15,993.9 \\ \hline \boxed{} \end{array}$$

$$\begin{array}{r} \boxed{} \\ - 2,443.4 \\ \hline \boxed{1,233.7} \end{array}$$
 \leftarrow
$$\begin{array}{r} \boxed{} \\ + 734.9 \\ \hline \boxed{} \end{array}$$
 \leftarrow
$$\begin{array}{r} \boxed{} \\ \times 4.7 \\ \hline \boxed{} \end{array}$$

Name _____ Date _____

Baseball Trivia



What do baseball umpires do before they eat?

Solve each of the problems carefully. Do the number problems first. Use these answers to help you solve the letter problems. When you finish a problem, locate the answer in the code boxes, then write the letter above the answer. If the answer appears in more than one box, fill in each box with the same letter.

O $4.9 \times 7.1 = 34.79$	L $(4.8 \div 12) \times 0.01 =$
A $8.2 + 9.9 - 3.4 =$	E $(P \times L) + A =$
H $O + A =$	R $H + L - P =$
P $22.04 - (2.3 \times 7.8) =$	F $A \times P =$
S $E - A =$	Y $59.43 - 24.27 =$
W $F - O =$	T $R - (10 \times 3.8) =$
U $Y - O + P =$	B $O - (A + I) =$

I $4.6 + 14.4 =$

7.394	49.49	14.7164	35.16
-------	-------	---------	-------

14.7	0.004	25.48	14.7	35.16	0.0164
------	-------	-------	------	-------	--------

1.09	45.394	4.47	0.0164	49.49
------	--------	------	--------	-------

O								
34.79	60.27	60.27	7.394	49.49	14.7164	19	45.394	

4.1	0.004	14.7	7.394	14.7164	0.0164
-----	-------	------	-------	---------	--------

Name _____ Date _____

Decimal Match



Write the answer to each decimal expression in the space provided. First write the answer as a fraction, and then as a decimal. Write the words from the problems in the matching answer spaces below to discover the punch line.

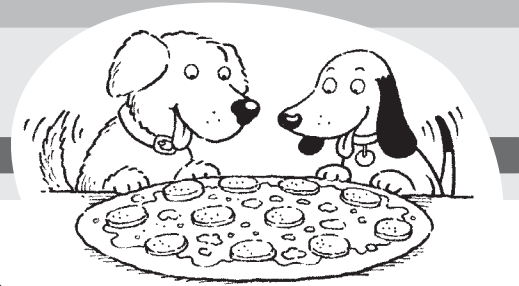
Why was the basketball player being congratulated?

- | | | | | | | |
|--|---|-----------------|---|-----|---|----------|
| 1. Seven hundredths | = | $\frac{7}{100}$ | = | .07 | = | THE |
| 2. Twelve and nine thousandths | = | | = | | = | A |
| 3. One hundred twelve and thirteen thousandths | = | | = | | = | HAD |
| 4. Seventeen and three tenths | = | | = | | = | MOTHER |
| 5. Seven thousandths | = | | = | | = | BOY |
| 6. Twenty-three and sixteen hundredths | = | | = | | = | JUST |
| 7. Four and four tenths | = | | = | | = | BOUNCING |
| 8. Seventeen and seventeen thousandths | = | | = | | = | PROUD |
| 9. Seven tenths | = | | = | | = | SHE |
| 10. Seventy-five and one hundredth | = | | = | | = | OF |
| 11. Seventeen and three thousandths | = | | = | | = | BABY |
| 12. One and nine hundredths | = | | = | | = | BECOME |

0.7	112.013	23.16	1.09
THE 0.07	17.017	17.3	75.01
12.009	4.4	17.003	0.007

Name _____ Date _____

Match It



Solve the problems below by matching the fractions to the equivalent decimals. Use a ruler or a straightedge to draw a line from the question to the answer (dot to dot). Your line will pass through a number and a letter. The number tells you where to write your letter in the code boxes to find the answer to the riddle below.

$\frac{9}{10}$	•	0.19
$\frac{1}{2}$	•	0.15
$\frac{2}{5}$	•	0.06
$\frac{3}{50}$	•	0.5
$\frac{3}{10}$	•	0.125
$\frac{19}{100}$	•	0.4
$\frac{17}{1000}$	•	0.9
$\frac{1}{8}$	•	0.3
$\frac{3}{20}$	•	0.017

$\frac{11}{20}$	•	0.25
$\frac{7}{100}$	•	0.16
$\frac{2}{8}$	•	0.8
$\frac{4}{5}$	•	0.7
$\frac{7}{1000}$	•	0.07
$\frac{4}{25}$	•	0.75
$\frac{7}{50}$	•	0.007
$\frac{7}{10}$	•	0.14
$\frac{3}{4}$	•	0.55



What toppings do dogs like on their pizzas?

		L																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		

Name _____ Date _____

Super Challenge



When Mr. Jones asked his sons who broke the window, what did one son say?

Solve each of the problems below. Then express each answer as a **decimal** in the space provided. Write the words from the problems in the matching answer spaces below to discover the punch line.

WHEN = $2 \frac{1}{10} + 3 \frac{3}{100} = 5.13$

THREW = $4 \frac{9}{10} - 2 \frac{3}{50} =$

HIM = $14 \frac{83}{1000} - 14 \frac{8}{100} =$

IT = $6 \frac{4}{5} + \frac{4}{25} + \frac{7}{10} =$

THE = $\frac{4}{10} + \frac{4}{100} + \frac{4}{1000} =$

AT = $\frac{17}{1000} + 3 \frac{19}{100} =$

I = $24 \frac{4}{5} - 10 \frac{1}{4} =$

HE = $4 \frac{9}{10} - 2 \frac{4}{5} =$

WAS = $\frac{3}{20} + \frac{2}{50} + \frac{5}{10} =$

SNOWBALL = $9 \frac{12}{20} - 2 \frac{7}{100} =$

DUCKED = $\frac{7}{10} + \frac{4}{5} + \frac{1}{2} =$

JOEY = $\frac{2}{4} + \frac{2}{5} + \frac{1}{2} =$

7.66	0.69	1.4	-	2.1	2.0	WHEN
14.55	2.84	0.444		7.53	3.207	5.13
						0.003

ANSWER KEY

BREAK THE CODE (p. 7)

T = 7 E = 56 A = 12
 R = 30 W = 6 H = 36
 N = 16 O = 21 M = 15
 I = 45 G = 10 K = 27
 U = 20 Y = 25 S = 8

Why should you always read your work after using spell check?
See they're know miss steaks in you're righting.

EQUIVALENT FRACTION MATCH (p. 8)

1/4	3/4	3/4	1/4	3/4	1/2	3/4	3/4	3/4	3/4	3/4	3/4
3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4

What four letters did the crowd chant to the man who had been in the ring with the professional wrestler?
RUOK

EQUAL VALUES (p. 9)

1 1/3 1 1/2 1 1/6
 1 5/6 1 3/5 1 3/4
 1 2/5 1 4/9 2 1/2
 2 1/5 1 2/7 1 1/4
 1 2/3 1 1/8 2 3/4
 1 3/7 1 1/12 1 1/5

When the teacher asked for a sentence containing the word "avenue," what did one student say?
My best friend's dog is about to have puppies and soon I'll avenue golden retriever to play with.

GREATER THAN (p. 10)

1/3 4/9 6/15 3/6
 3/5 10/15 7/10 13/20
 1/2 9/16 3/4 6/10
 4/6 14/18 9/12 21/24
 1/4 5/6 4/12 6/16
 5/8 11/16 16/24 21/32

When the teacher asked for a sentence containing the word "climate," what did one student say?
When my group arrived at the base of the mountain it was so steep that we couldn't climate.

LEAST TO GREATEST (p. 11)

1/12 1/6 1/4 1/3 3/8 5/12
 1/30 2/15 1/5 5/20 3/10 2/5
 1/2 7/12 5/8 2/3 3/4 5/6
 1/7 8/28 3/7 7/14 5/7 7/7
 1/5 4/10 4/6 7/10 4/5 13/15
 2/4 9/16 20/32 6/8 13/16 8/8

How many schoolbooks can be put into an empty backpack?
Only one because after that the bag is not empty.

WHAT DID THE OCEAN SAY TO THE SEASHORE? (p. 12)

1. 6 7. 10 13. 56
 2. 15 8. 20 14. 30
 3. 14 9. 40 15. 21
 4. 12 10. 8 16. 63
 5. 18 11. 24 17. 36
 6. 28 12. 16 18. 9

Nothing—it just waved.

FIND THE MATCH (p. 13)

6/9 = 2/3 12/14 = 6/7
 6/18 = 1/3 2/8 = 1/4
 2/12 = 1/6 15/21 = 5/7
 14/16 = 7/8 6/12 = 1/2
 3/27 = 1/9 10/16 = 5/8
 9/12 = 3/4 4/20 = 1/5
 8/18 = 4/9 14/18 = 7/9
 8/36 = 2/9 10/12 = 5/6
 6/10 = 3/5 9/21 = 3/7
 10/18 = 5/9 12/32 = 3/8

Why did the sword swallower swallow an umbrella?
He knew that he would be retiring very soon so he wanted to put something away for a rainy day.

DID YOU HEAR? RIDDLES (p. 14)

S = 6/7 K = 1/2 T = 7/8
 Y = 1/3 I = 5/9 C = 2/5
 A = 2/3 U = 7/9 M = 3/4
 O = 1/4 E = 5/8 R = 4/9
 P = 3/5 N = 1/12 H = 5/7
 L = 5/12 D = 1/5

Did you hear...
 ... about the construction worker's shirt collar?
 Never mind—I don't like dirty stories.
 ... about the woman who swallowed a fish bone?
 Never mind—It really chokes me up.

STICKY CODE (p. 15)

R = 1/2 A = 5/6
 I = 1 N = 2/3
 G = 2/5 E = 3/4
 O = 6/7 Y = 5/8
 T = 7/9 K = 1/5
 H = 5/7 S = 9/10
 L = 1/8 C = 1/12
 V = 8/9 W = 3/5

What did one bottle of glue say to the other?
We will certainly have to stick together.

MIXED NUMBER SEARCH (p. 16)

12 5/8 4 1/3 5 1/3 5 7/12
 33 1/2 8 1/6 12 1/4 13 2/7
 12 2/3 5 1/7 7 4/5 7 1/2
 11 2/3 11 1/2 23 1/8 5 2/5

H	G	D	E	W	A	N	T
3	5	1/2	3	4	1/2	4	1/2
N	T	H	I	S	S	H	I
7	2	1	2	3/4	2	3	1/4
R	T	S	E	D	B	O	Y
1	3	3/4	4	3	1	2	3/4
T	O	B	S	A	M	E	A
3	9	1/2	3	3	1/2	7	1/2
H	I	V	S	T	E	A	R
5	1/2	3	5	3/4	2	8	1/4
R	Y	H	E	C	O	U	L
2	5	7	1/2	9	1	1	1/2
D	S	N	O	W	I	N	O
1	1	1/2	8	1	2	1/4	7
L	C	R	E	A	T	E	D
6	4	5	1/2	3	3	7	1/2

Why did the cat sleep with the ceiling fan on?
He wanted to be a very cool cat.

WHY COULDN'T THE GREAT HOUDINI EVER ANSWER THE PHONE? (p. 17)

N = 11/12 L = 19/30
 C = 1 1/9 E = 1 3/20
 A = 1 1/3 D = 1 1/6
 H = 1 W = 3/5
 Y = 1 2/15 T = 4/5
 U = 1 1/4 M = 13/18
 I = 5/6 P = 13/14
 G = 1 1/15 S = 9/10

The magician was always tied up.

LOW-GRADE INFECTION

(p. 18)

11/24	1/3	1/10	5/24
1/6	7/18	1/4	4/15
1/12	1/2	1/8	1/36
3/10	2/15	5/12	4/9

Why did the boy's dad suffer from a low-grade infection?

Every time he saw his son's school report card he always felt sick to his stomach.

HUMPTY DUMPTY RIDDLE

(p. 19)

G = 2 1/4	A = 8 3/10	P = 4 7/9
F = 4 7/12	I = 5 3/4	N = 5 5/12
U = 6 1/30	E = 1 1/2	K = 7 4/15
T = 3 7/10	R = 4 17/24	M = 4 1/12
O = 9 5/12	L = 1 2/9	B = 6 5/12

Why did Humpty Dumpty have a great fall?

To make up for a boring fall.

WHAT'S HIS REASON? (p. 20)

A = 5	R = 12	O = 6
S = 8	D = 11	T = 19
P = 4	C = 9	U = 21
B = 15	H = 17	Y = 14
V = 13	I = 7	L = 23
E = 10		W = 18

Why did the preschooler take his toy car to school?

The little boy's purpose was to drive his teacher up the wall.

LET'S FLY SOUTH (p. 21)

U = 2 1/3	G = 4 5/9	H = 1 1/4
E = 3 1/2	C = 8 1/2	W = 3 1/6
O = 4 1/4	N = 3 13/20	D = 2 1/2
M = 5 5/7	I = 6 3/5	L = 2 9/14
T = 3 7/12	A = 7 7/10	K = 4 2/3

Why do birds fly south for the winter?

It would take them much too long to walk.

39 ERRORS (p. 22)

x	1/2	4	1/6	1/6	1/6	8	3	1/6	1/6	9	5	1/4	2	1/40
1/4	1/6	1/4	1/60	1/60	1/4	1/4	1/4	1/24	1/24	1/4	1/4	1/12	1/4	1/40
1/6	1/6	1/6	1/27	1/15	1/21	1/6	1/6	1/18	1/12	1/6	1/6	1/12	1/6	1/60
1/6	1/18	1/6	1/22	1/60	1/6	1/6	1/6	1/24	1/24	1/6	1/6	1/32	1/6	1/60
1/2	1/4	1/6	1/18	1/14	1/14	1/2	1/2	1/6	1/6	1/6	1/6	1/24	1/6	1/60
1/6	1/12	1/6	1/64	1/60	1/6	1/6	1/6	1/18	1/18	1/6	1/6	1/24	1/6	1/60
1/6	1/10	1/6	1/6	1/60	1/6	1/6	1/6	1/18	1/18	1/6	1/6	1/24	1/6	1/60
7	1/2	28	1/6	1/6	1/6	56	21	1/6	1/6	63	35	1/4	14	1/60

What did the poodle say when it sat on some sandpaper?

RUFF

CROSS THEM OUT (p. 23)

7 4/5	5 3/5	7 3/5	4 7/8
12	28 1/3	16	12 3/4
7 1/3	9 4/5	10 1/2	12 1/2
52	6 3/5	10 2/3	3 3/4

What happens to a rabbit when it gets very angry?

The bunny really gets hoppin' mad.

GONE FISHING (p. 24)

E = 1 1/2	D = 2/3	B = 1
S = 5	F = 2	O = 7 1/2
N = 1 1/5	H = 1 3/7	I = 1 2/3
T = 3/8	M = 15	A = 1/8
W = 3 1/2	R = 1 4/5	L = 3 1/3

Why couldn't Batman go bass fishing?

His little friend robin ate all the worms.

TIC-TAC-TOE #1 (p. 25)

3 5/7	1 3/28	3
0	0	X
2	3	1 3/14
X	X	0
1 3/7	2 1/12	1 7/8
0	0	0

SURFER BOY (p. 28)

Y 1109.87	E 93.394	I 4.217
A 1.846	R 305.99	L 151.643
W 404.127	P 14.46	G 165.60
N 5.195	M 67.897	S 116.5
O 360.039	D 932.255	H 79.901
T 204.89		

Why did the surfer boy hurry across the busy street?

He simply wanted to get to the other tide.

CRACK THE CODE #1 (p. 29)

68.105	35.214	151.30	813.032
767.479	560.02	31.81	156.538
42.846	82.628	507.94	65.856

What bad news did the ringmaster at the circus convey to the audience?

We must apologize but the invisible man won't be seen here tonight.

LET'S PLAY BINGO (p. 30)

13.006	3.606	1.9	1.77	15.88
14.2	54.25	11.263	3.67	85.5
12.445	2.17	53.5	90.8	10.5

B I N G O				
15.88	2.47	54.25	79.8	1.9
12.445	64.28	28.7	11.263	85.5
34.75	2.629	90.8	47.2	16.06
2.17	1.77	12.2	10.5	2.67
6.08	53.5	33.74	13.006	6.15

WHAT'S THE DIFFERENCE? (p. 31)

197.33	361.657	898.106	797.55
351.17	2.845	77.79	642.7
9.959	405.16	884.48	15.055

What's the difference between school teachers and train engineers?

School teachers train the mind while the train engineers mind the train.

SHAPELY MATH (p. 32)

$$1. (\overline{86} + \triangleleft 73 \triangleright) - (\triangleleft 43 \triangleright + \overline{6.33}) = \underline{43.97}$$

$$2. (\overline{22} + \triangleleft 364 \triangleright) - (\triangleleft 24 \triangleright + \overline{4.07}) = \underline{24.37}$$

$$3. (\overline{641} + \triangleleft 246 \triangleright) - (\triangleleft 307 \triangleright + \overline{24.3}) = \underline{39.19}$$

$$4. (\overline{83} + \triangleleft 149 \triangleright) - (\triangleleft 24 \triangleright + \overline{306}) = \underline{10.27}$$

$$5. (\overline{55} + \triangleleft 61 \triangleright) - (\triangleleft 364 \triangleright + \overline{306}) = \underline{4.9}$$

$$6. (\overline{641} + \triangleleft 307 \triangleright) - (\triangleleft 149 \triangleright + \overline{176}) = \underline{34.67}$$

EQUAL VALUES (p. 33)

5.012	.640	44.428	17.5
9.88	33.402	7.914	29.97
209.1	55.52	38.46	18.442
35.62	57.82	9.12	1.914
29.97	17.5	18.442	7.914
0.64	209.1	5.012	9.12
38.46	33.42	57.82	35.62
55.52	9.88	1.914	44.428

What kind of hair styles would invisible people have?
I'm not exactly sure but I'm quite certain that they wouldn't be much to look at.

CROSS-NUMBER PUZZLE (p. 34)

- ACROSS:** 1. 13.14 3. 2188.5
 5. 3465.5 7. 66.052 9. 811.8
 10. 336.36
DOWN: 1. 187.78 2. 461.52
 4. 119.16 5. 345.6 6. 5741.9
 8. 66.06

QUESTION AND ANSWER (p. 35)

24.854	163.53	28.278	27.775
12.298	38.778	24.072	4806.9
644.49	31.262	38.106	2880
375.96	5,678	359.31	244.902

How are contortionists like thrifty people?
These people certainly know how to make both ends meet!

LAST NUMBER—FIRST NUMBER (p. 36)

1. 13.512 2. 253.46 3. 629.76
 4. 63.074 5. 47.775 6. 523.26
 7. 64.823 8. 348.54 9. 449.19
 10. 95.448 11. 836.78 12. 824.38

Name the fictional Englishman who discovered the circle.
Sir Cumference

CRACK THE CODE #2 (p. 37)

- I = 0.36 D = 744.0
 A = 0.0086 E = 56.00
 A = 0.047 D = 84,000
 R = 0.0432 D = 0.00741
 U = 0.01 A = 0.163
 A = 0.000428 E = 75.30
 Y = 3,120.00 H = 121.21
 A = 0.048 E = 9.56
 Y = 462.400 B = 3.92
 L = 0.0791 D = 3,842.00
 T = 546.30 A = 0.248
 V = 0.000005 H = 0.772
 D = 97.320

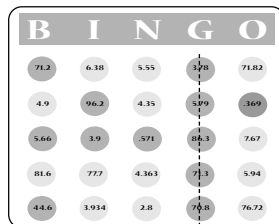
When the little girl's father encouraged her to study so she could get ahead, what did she say?
But daddy, I already have a head!

TIC-TAC-TOE #2 (p. 38)

6.25	.666	94.175
X	X	O
4.89	3.348	9.44
X	O	X
2.23125	89.4	33.9
O	X	X

DIVISION BINGO (p. 39)

86.3	71.2	3.9	.369
5.66	.571	96.2	71.3
44.6	3.78	5.79	70.8



DECIMAL FUN (p. 40)

- 223.78 355.5 19.09 524.908
 255.975 574.2 97.9 258.12
 209.308 461.414

Why did the puppy start to bark after eating his dinner?
The puppy was still hungry and wanted a second yelping.

FOLLOW THE ARROWS (p. 41)

- 9.69 → 7.752 → 26.222 → 13.111 → 3.611
 498.597 → 16619.9 → 626.0 → 2942.2 → 3677.1

BASEBALL TRIVIA (p. 42)

- O = 34.79 L = 0.004
 A = 14.7 E = 14.7164
 H = 49.49 R = 45.394
 P = 4.1 F = 60.27
 S = 0.0164 Y = 35.16
 W = 25.48 T = 7.394
 U = 4.47 B = 1.09
 I = 19

What do baseball umpires do before they eat?
They always brush off their plates.

DECIMAL MATCH (p. 43)

1. 7/100 = 0.07 2. 12 9/1000 = 12.009
 3. 112 13/1000 = 112.013
 4. 17 3/10 = 17.3 5. 7/1000 = 0.007
 6. 23 16/100 = 23.16 7. 4 4/10 = 4.4
 8. 17 17/1000 = 17.017
 9. 7/10 = 0.7 10. 75 1/100 = 75.01
 11. 17 3/1000 = 17.003
 12. 1 9/100 = 1.09

Why was the basketball player being congratulated?
She had just become the proud mother of a bouncing baby boy.

MATCH IT (p. 44)

1. 0.9 2. 0.5 3. 0.4 4. 0.06 5. 0.3
 6. 0.19 7. 0.017 8. 0.125 9. 0.15
 10. 0.55 11. 0.07 12. 0.250 13. 0.8
 14. 0.007 15. 0.16 16. 0.14 17. 0.7
 18. 0.75

What toppings do dogs like on their pizzas?
Salami 'n' muttsarella

SUPER CHALLENGE (p. 45)

First column: 5.13, 0.003, 0.444
 14.55, 0.69, 2.0
 Second column: 2.84, 7.66, 3.207 2.1, 7.53, 1.4
 When Mr. Jones asked his sons who broke the window, what did one son say?
It was Joey—he ducked when I threw the snowball at him.