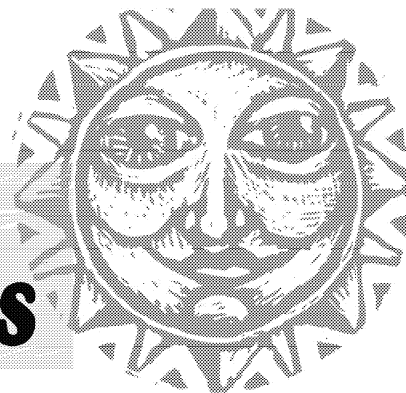


Daily *warm-ups*



PRE-ALGEBRA

by Hope Martin

J. WESTON
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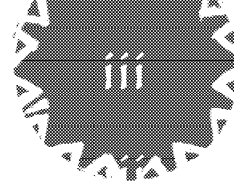


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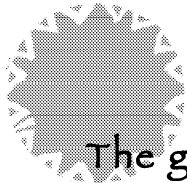
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The Daily Warm-Ups series is a wonderful way to turn extra classroom minutes into valuable learning time. The 180 quick activities—one for each day of the school year—review, practice, and teach pre-algebra. These daily activities may be used at the very beginning of class to get students into learning mode, near the end of class to make good educational use of that transitional time, in the middle of class to shift gears between lessons—or whenever else you have minutes that now go unused. In addition to providing students with structure and focus, they are a natural path to other classroom activities involving math or critical thinking.

As they solve these daily puzzles, your students will be using context clues and will interpret quantitative clues by making connections between abstract rules of number theory and motivating historical events. Each of the puzzles has one extra clue. This clue serves two purposes; the first is to give the students a substitute clue (in case they don't understand all of the puzzle-clues). Second, this extra clue encourages students to check their work. It helps them determine if the answer they found makes sense.

Daily Warm-Ups are easy-to-use reproducibles—simply photocopy the day's activity and distribute it. Or make a transparency of the activity and project it on the board. You may want to use the activities for extra credit points or as a check on the math skills that are built and acquired over time.

However you choose to use them, *Daily Warm-Ups* are a convenient and useful supplement to your regular lesson plans. Make every minute of your class time count!

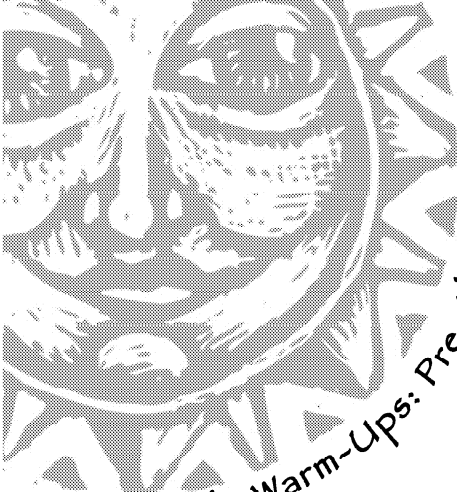


States of the Union

The growth of the United States took place over the course of 172 years.

Delaware was the first of the colonies to join the Union (December 7, 1787) and Hawaii became the 50th state (August 21, 1959).

The mathematics puzzles in this chapter help celebrate the nation we are today. When students solve the mathematical clues, they learn the year that each state became a part of the United States of America. Interdisciplinary discussions might encourage students to explore the correlation between the dates colonies and territories became states, life in colonial times, pioneer exploration, and the growth of the western part of the United States.



Daily Warm-Ups: Pre-Algebra

The Constitution of the United States was adopted by a Convention of the States on September 17 of this year. Solve the puzzle to find the year.

- My hundreds and units digits are the fourth prime number.
- The two-digit number formed by my thousands and tens digits is equal to $3^2 \times 2$.
- The sum of all my digits is equal to $5^2 - 2$.

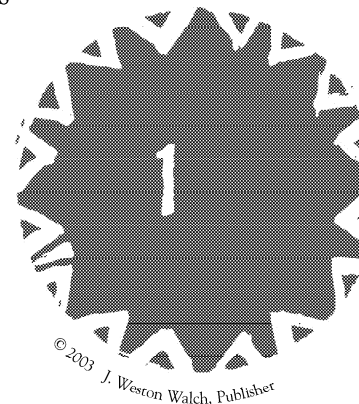
What year am I?

Thousands

Hundreds

Tens

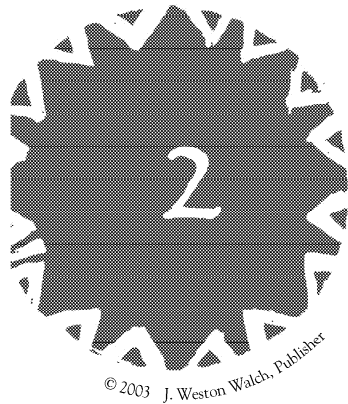
Units



Delaware, Pennsylvania, and New Jersey were the first three colonies to enter the Union. They all became states in the month of December of the same year. Solve this puzzle to learn the year.

- My hundreds and units digits could be the sides of a square with a perimeter of 28 units and an area of 49 square units.
- My tens digit is equal to 2^3 .
- The sum of all of my digits is 2 less than the number of years in $\frac{1}{4}$ of a century.

What year am I?



Thousands

Hundreds

Tens

Units





Georgia, Massachusetts, Connecticut, New Hampshire, South Carolina, Virginia, New York, and Maryland all became states in the same year. They became the 4th through the 11th states of our United States. Solve this puzzle to learn the year.

- My tens and units digits form a number that is divisible by 2, 4, 8, 11, 22, and 44.
- My hundreds digit is the largest single-digit prime number.
- The sum of my digits is the same as the number of quarts in 6 gallons.

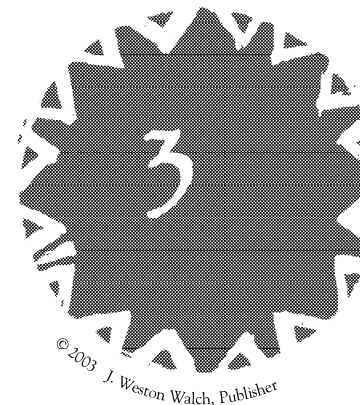
What year am I?

Thousands

Hundreds

Tens

Units



North Carolina became the 12th colony to join the Union. It became a state on November 21 of this year. To learn the year, just solve this puzzle.

- My hundreds, tens, and units digits are consecutive integers with a mean of 8.
- The sum of all of my digits is equal to the sum of the first five odd numbers.

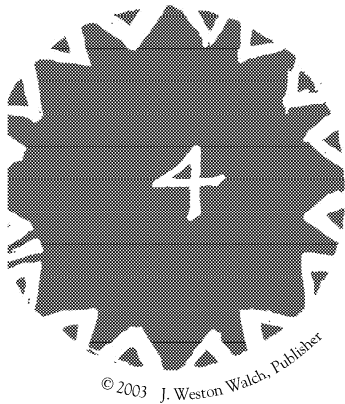
What year am I?

Thousands

Hundreds

Tens

Units



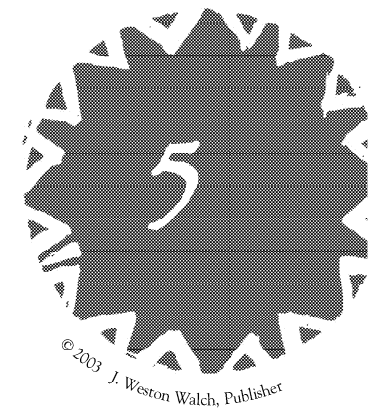


Rhode Island was the last of the 13 original colonies to join the Union. It became a state on May 29. To find the year that Rhode Island became a state, just solve this puzzle.

- My date is divisible by 2, 5, and 10.
- My hundreds and tens digits are consecutive odd integers with a sum of 16.
- My hundreds digit is equal to $2^3 - 1$.
- The sum of all of my digits is the same as the two-digit number formed by my thousands and hundreds digits.

What year am I?

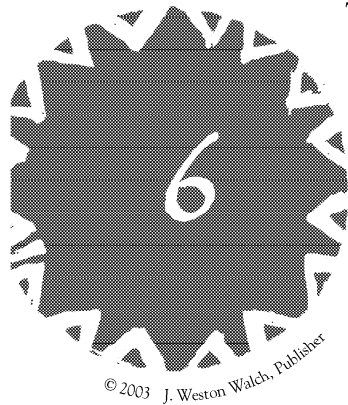
_____ _____ _____ _____
Thousands Hundreds Tens Units



On March 4 of this year, Vermont became the 14th state to join the Union. To learn the year that Vermont became a state, just solve this puzzle.

- My hundreds and tens digits are odd numbers whose sum is 16 and product is 63.
- My hundreds digit is a prime number.
- The sum of all of my digits is the same as the number of months in $1\frac{1}{2}$ years.

What year am I?



Thousands

Hundreds

Tens

Units



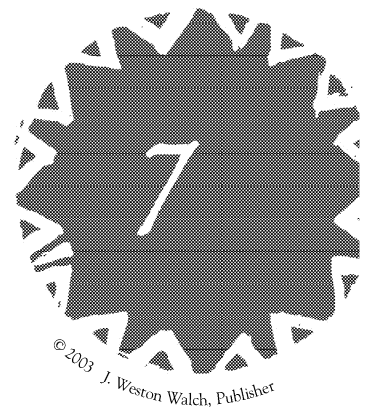


Kentucky became the 15th state of the Union on June 1 of this year. To learn the year Kentucky gained statehood, just solve this puzzle.

- My units digit is the only even prime number.
- My hundreds and tens digits could be the sides of a rectangle with a perimeter of 32 units and an area of 63 square units.
- The sum of all of my digits is the largest prime number less than 20.

What year am I?

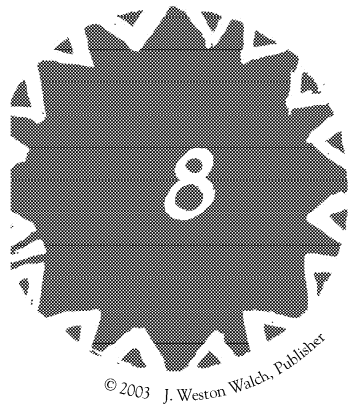
_____ _____ _____ _____
Thousands Hundreds Tens Units



Tennessee became the 16th state of the United States when it joined the Union on June 1 of this year. To learn the year Tennessee became a state, just solve this puzzle.

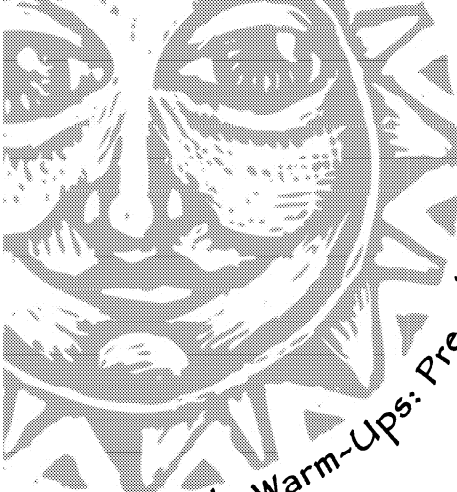
- My units digit is a perfect number.
- The sum of my thousands and tens digit is the same as the number of years in a decade.
- My hundreds digit is 3 more than $\sqrt{16}$.
- The sum of all of my digits is the same as the first prime number greater than 20.

What year am I?



_____ Thousands _____ Hundreds _____ Tens _____ Units





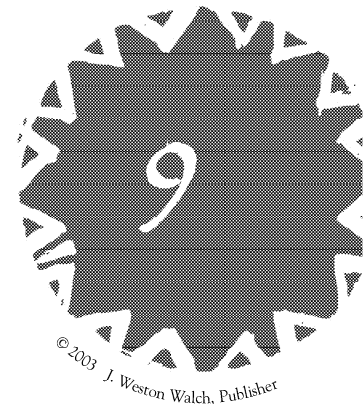
Daily Warm-Ups: Pre-Algebra

On March 1 of this year, Ohio became the 17th state of the United States. To learn the year, just solve this puzzle.

- My units digit is an odd number, it's prime, and it is the fourth number in the Fibonacci sequence.
- The two-digit number formed by my hundreds and tens digit is equal to $3 + 5 + 7 + 9 + 11 + 13 + 15 + 17$.
- The sum of all of my digits is equal to $\sqrt{144}$.

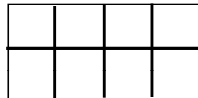
What year am I?

_____	_____	_____	_____
Thousands	Hundreds	Tens	Units



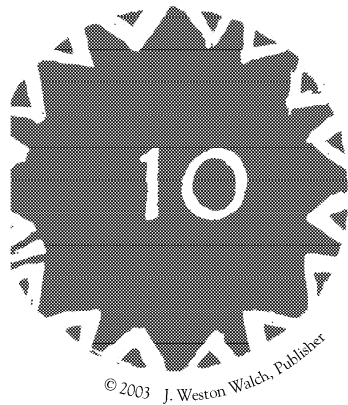
Louisiana became the 18th state of the Union on April 30 of this year. To learn the year that Louisiana became a state, just solve this puzzle.

- The two-digit number formed by tens and units digits could be the perimeter of this rectangle:



- My hundreds digit is 4 times my units digit.
- The three-digit number formed by my thousands, hundreds, and tens digits is a palindrome.

What year am I?



Thousands

Hundreds

Tens

Units



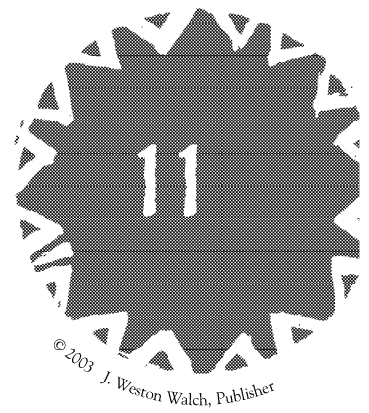


On December 11 of this year, Indiana became the 19th state to join the Union. Solve this puzzle to learn the year.

- The two-digit number formed by my tens and units digit is equal to 2^4 .
- My hundreds digit is the same as the number of quarts in 2 gallons.
- The sum of all of my digits is equal to 2^4 .

What year am I?

Thousands Hundreds Tens Units



Mississippi became a state on December 10 of this year. It was the 20th state to join the Union. Solve this puzzle to learn the year.

- The two-digit number formed by my hundreds and units digits is 13 less than 10^2 .
- The sum of all of my digits is 2 greater than the product of 5 and 3.

What year am I?

Thousands

Hundreds

Tens

Units

