A hungry spider settles down on the floor in the corner of a room for a mid-day nap. Suddenly he spies a fly resting on the floor in the opposite corner. “What a yummy snack the fly would be,” thinks the spider. The spider sets out to trap the fly. The spider is clever. He takes the shortest path without walking on the floor. (No chance of getting squished!)

The room is 6 meters long, 5 meters wide, and 3 meters high. What is the shortest path?

Bonus:
If the room is 10 meters long, 6 meters wide, and 3 meters high, what is the shortest path?

Six to One

Insert an operation (+, −, x, ÷) in each square to create an expression that has the same value as the target number. Follow the order of operations.

1) 6 [ ] 5 [ ] 4 [ ] 3 [ ] 2 [ ] 1 = 19
2) 6 [ ] 5 [ ] 4 [ ] 3 [ ] 2 [ ] 1 = 43
3) 6 [ ] 54 [ ] 3 [ ] 21 = 45
4) 6 [ ] 54 [ ] 32 [ ] 1 = 93
5) 65 [ ] 43 [ ] 2 [ ] 1 = 150
6) 6 [ ] 5 [ ] 4 [ ] 3 [ ] 2 [ ] 1 = 37

Announcing the PRIME Great STEMatician

We are pleased to announce that the winner of this semester’s “Great STEMatician Award” is Hena Mehmetaj, a teacher in the Prime the Pipeline Project. She earned 121 points by answering MATHgazine challenge questions correctly to earn the title of the PRIME Great STEMatician. Both Brie Rundell and Marcelle Lockey earned 45 points to claim the runner-up position. Congratulations to all our participants. We will unveil a new contest when the MATHgazine begins publishing again after summer break. Be watching for our next issue in August.
Sports Measures

Use all numbers in the rectangle to the right of each problem.
Fill in the blanks so that the story makes sense.

1. A hockey rink is _________ feet long
and _________ feet wide, and has an area
of _________ square feet. A hockey puck is
________ inches thick and _________ inches in
diameter. The circumference of the top of the puck
is about _________ inches.

2. The length of a bowling lane from the foul line
is _________ feet _________ inches, or
__________ inches. The maximum circumfer-
ence of a bowling ball is _________ feet, or
__________ inches, and the maximum weight
allowed is _________ pounds.

3. A basketball court is _________ feet long
and _________ feet wide, and has an area
of _________ square feet. The rim of the basket has
a diameter of _________ inches and a circumfer-
ence of about _________ inches.

4. In baseball, the distance from the home plate to
the second base is ______ feet 3 ______ inches. The bases
are shaped like a square and measure _________
 inches by _________ inches, or _________
square inches. The circumference of a baseball can-
not be less than _________ inches or more than
__________ inches.
May Math History

Use the clues to the missing numbers in the story to fill in the years.

Julia Ward Howe, born May 27, _______________, wrote the words for the Battle Hymn of the Republic. At age 53, in 1872, Howe suggested the idea of an International Mothers’ Day. That day of celebration was not officially recognized as a holiday until 42 years later in __________, 4 years after her death in __________. It is usually celebrated in May. Because of her accomplishments, on January 8, __________, Howe became the first woman elected to the Academy of Letters. In 1970, 52 years after her election to the Academy of Letters, Howe was inducted into the Songwriter’s Hall of Fame. Seventeen years later, in ____________, Julia Ward Howe’s picture was featured on a 15-cent US stamp.

Odd Product

Make two sets of six cards, each set numbered 1, 2, 3, 4, 5, 6. Arrange one set of cards in a horizontal line in this order: 1, 2, 3, 4, 5, 6. Under these cards, place the second set of cards in a horizontal line. Arrange the second set so that when you subtract column by column and multiply the differences, an “odd” product is produced.

\[
\begin{array}{cccccc}
1 & 2 & 3 & 4 & 5 & 6 \\
\hline
\end{array}
\]

\[? \times \ ? \times \ ? \times \ ? \times \ ? \times \ ? = ?\]

After you have solved the first problem, start over again using only cards 1, 2, 3, 4, and 5.

Can an odd product be produced? Can an odd product always be produced for any set of cards 1, 2, 3,…n (any number)?

When an odd product is produced for n cards, how many different arrangements of the second set of cards will produce the odd product?
Balzano is a puzzle that will tap into your logical reasoning abilities. It uses ideas from two popular puzzlers, Pico Fermi Bagel and Mastermind®. Read the directions carefully, then try your hand at Balzano Colors and Balzano Shapes.

**Directions:**
Your job is to figure out the desired arrangement of three or more colors, numbers, shapes, or letters from clues that provide information about the elements and their locations. Each clue consists of two parts.

**The Arrangement Column** shows sets of elements in rows.

**Correct Color or Shape in the Correct Place** identifies the number of elements that are the right color or shape AND are in the right position.

**Correct Color or Shape in the Wrong Place** identifies the number of elements in the arrangement that are the right color or shape BUT are not in the right positions.

**Incorrect Color or Shape** identifies the number of elements that are not correct in the arrangement. Remember that the numbers in the three columns to the right of each arrangement describe the entire arrangement.

### Balzano Shapes

Use the clues to figure out the correct arrangement of shapes.

<table>
<thead>
<tr>
<th>Arrangement</th>
<th>Correct shape in correct place</th>
<th>Correct shape in wrong place</th>
<th>Incorrect shape</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Balzano Colors

Use the clues to figure out the correct arrangement of colors.

<table>
<thead>
<tr>
<th>Arrangement</th>
<th>Correct color in correct place</th>
<th>Correct color in wrong place</th>
<th>Incorrect color</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Y Y</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>R R G</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>G G R</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>R G G</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Correction**

In some copies of the April MATHgazine, a number in the “Money Makes Sense” problem was printed incorrectly. The numbers for the ball should have been 452. We regret any inconvenience this may have caused.