Face Up

\[
\begin{array}{cccc}
A & B & C & D & E \\
\triangle & 3 & \bigcirc & \square & 6 \\
\end{array}
\]

All cards have numbers (1-9) on one side and shapes on the other. No numbers are repeated. Use the clues to figure out what shapes and numbers are on each card. Write the numbers or shape under the card.

Clues:
- All cards with numbers that are multiples of 3 have circles on the other side.
- Rectangles have even prime numbers.
- Triangles have even square numbers.

Take the PRIME MATHgazine Junior Challenge! Solve the problems and send them in for a chance to become the GREAT STEMATICIAN OF 2013. Awards in July 2013. Submissions for this issue are due April 25, 2013.

3 ways to submit:
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**Figuring Out Figures**

The mean of five counting numbers is 8.

1. What is the greatest number possible?
2. What is the least number possible?
3. If 28 is one of the five numbers, what is the greatest that one of the remaining numbers could be?
4. If the median is 5, what is the greatest that one of the remaining numbers could be?

**A DUMB Problem!**

\[D + B = 11\]
\[U + M = 11\]
\[B + U + M = 19\]

\[D + U + M + B = ?\]
Square Numbers to Square Sums
Use square numbers to make square sums. Write expressions for the value below.
You may:
• add or subtract (only).
• use as many square numbers as you like in each expression. No repeats of numbers.
• Use parenthesis where needed.

____________________________________________ = 100
____________________________________________ = 121
____________________________________________ = 144
____________________________________________ = 169
____________________________________________ = 196
____________________________________________ = 225

Wow Fact!
March 10, 2013 is a special day. When writing the date with numbers, we have 3, 10, 2013. Removing the commas, we have the 7-digit palindrome: 3102013
Reading it forwards or backwards, it reads the same.
In 2014, we will get a 7-digit palindrome in what month and on what date?
__________, ________, 2014
(month)              (day)
March Marches On

The rubber band and the game of Monopoly were both invented in the month of March, but in different years. Use the clues. Figure out the date and year for each.

Rubber Band Clues

- The rubber band was invented in the 19th century.
- The sum of the digits of the year is divisible by 5 and 9.
- The date is a prime number.
- The sum of the digits of the date is a cubic number.

The rubber band was invented on March _____, __________.

Monopoly Clues

- Monopoly was invented in the 20th century.
- The sum of the digits of the year is a square number.
- The ones digit of the year is the first odd prime number.
- The date is the greatest single-digit prime number.

Monopoly was invented on March _____, __________.