Do the PRIME MATHgazine Junior Challenge! Solve the problems and send them in for a chance to become the GREAT STEMATICIAN and WIN A PRIZE! Each answer is worth 5 points. Points will be awarded for both creative ways to solve the problems, as well as for correct answers. Solutions due June 21, 2011. Awards in June.

3 ways to submit:
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Square It!
Square A is made from 49 same size small square tiles.

1. What is the perimeter of the figure?

2. Imagine using the same size small squares to surround Square A to make the next larger square, Square B.
   - What is the perimeter of Square B?
   - What is the area of Square B?

Perimeter Puzzle!
The length of a rectangle is 3 times its width. Its length is 12 inches.

What is its perimeter?______

What is its area?_______
Talent Show Tryouts

Use all of the numbers in the sign
Fill in the blanks so that the story makes sense.

1. The Music Department of Merrymont School is planning a talent show. Students tried out in _____categories: singing, dancing, and playing a musical instrument. There were _____ singers, _____ dancers, and _____ musicians who tried out for the talent show. There was a total of _____ singers, dancers, and musicians. The ratio of singers to dancers was 3 to 2.

2. There were _____ drummers, ______ pianists, and _____ trumpet players who tried out for the talent show. The ratio of the number of drummers to the number of pianists was 1 to 4. There were half as many trumpet players as pianists. There were also _____ students playing other instruments at the tryouts.

3. There were _____ tap dancers, ____ ballet dancers, and ____ other dancers in the tryouts. There were 3 times as many tap dancers as there were ballet dancers. Of the 36 dancers, _____%, or _____ dancers, were selected to be in the show.

4. The talent show tickets went on sale _____ weeks, or _____ days, before the show. The ratio of the number of adult tickets to the number of student tickets printed was 3 to ______. There were _____ adult tickets and _____ student tickets printed.
Make Rectangles

1. Using 24 sticks, all the same length, make some rectangles.
   A) How many rectangles with different length perimeters can you make?
   B) Which has the greatest perimeter?
   C) Which has the greatest area?

2. Using 36 sticks, all the same length, make some rectangles.
   A) Which rectangle has the least perimeter? __________
   B) Which rectangle has the greatest area? __________

Pattern Puzzle

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The pattern of numbers continues.

1. What is the top number in Column 10? _______
2. What is the bottom number in Column 15? _______
3. What is the second number from the top in Column 20? _______
Mystery Numbers

Use the clues to figure out B.

- B < 60
- B is a multiple of 3
- B ≥ 30
- The sum of the digits of B is 9
- B is not divisible by 5
- B ≠ 6 x 6

Use the clues to figure out Y.

- Y is divisible by 4
- 6 is a factor of Y
- 5 is a factor of Y
- 30 < Y < 150
- Y ≠ 60

 Signs

Write +, −, ×, or ÷ in each box. Complete the number sentences.

1. 2 □ □ 3 □ □ 4 □ □ 5 = 14
2. 2 □ □ 3 □ □ 4 □ □ 5 = 15
3. 2 □ □ 3 □ □ 4 □ □ 5 = 62
4. 2 □ □ 3 □ □ 4 □ □ 5 = 26
5. 2 □ □ 3 □ □ 4 □ □ 5 = 19
6. 2 □ □ 3 □ □ 4 □ □ 5 = 5