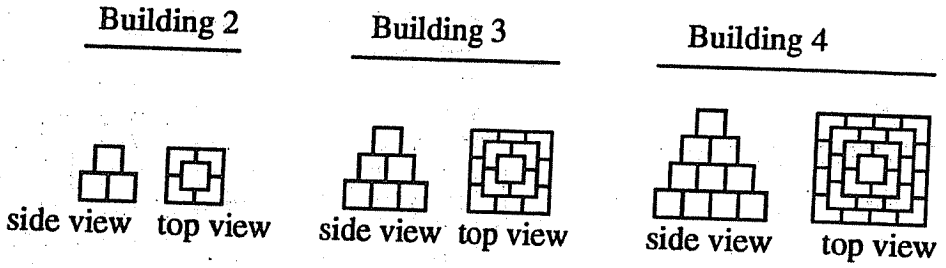
MATH SUPERSTARS – 6

Uranus, XIII

Name: _____

(This shows my own thinking.)

★★★★ 1. Below you can see the side view and top view of three buildings in a pattern of buildings made from sugar cubes. Study the pattern until you can visualize how Building 5 would look.



a. Draw the side view and top view of building 5 below.

side view top view

b. How many cubes would it take to make Building 5? _____

c. How many cubes would it take to make Building 10 in the pattern? _____

★★ 2. A friend tells you she made 96, 83, and 87 on the past three math tests. What must she make on the next test to attain an average of 90?

Answer: _____

★★ 3. Compute:

a) $3.7 + 4.78 + 9\frac{3}{5} - 4.09 + 6 =$ _____

b) $\frac{5}{12} + \frac{7}{8} - \frac{2}{3} + 1\frac{1}{2} - 2\frac{3}{24} =$ _____

★★ 4. A patch of water lilies doubles itself in size each day. From the time the first leaf appeared to the time when the pond was completely covered took 40 days. How long did it take for the pond to be half covered in lily pads?

Answer: _____

★★★ 5. Look at the graph below. The point (5, 12) has a circle around it, and the point (12, 12) has a box around it. The first number in parenthesis shows how far horizontally to go to find the point, and the second number shows how far vertically to go to find the point. Follow these directions exactly and you should have a word spelled out. Make your lines very heavy, or use a different color, so the lines will stand out against the grid.

Put a big dot at (3, 3).

Connect (16, 7) to (16, 3).

Connect (14, 7) to (14, 3).

Connect (16, 5) to (14, 5).

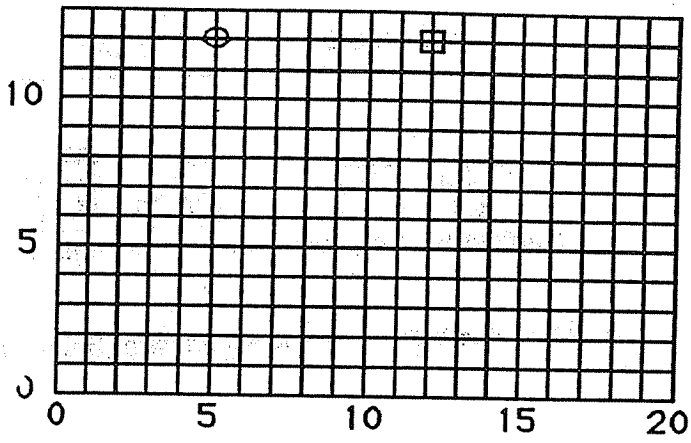
Connect (7, 3) to (7, 7)to(5, 7)to(5, 5)to(7, 5).

Connect (3, 7) to (3, 4).

Connect (8, 3) to (10, 3) to (10, 7).

Connect (11, 7) to (13, 7) to (13, 3) to (11, 3).

Connect (12, 5) to (13, 5).



★★★ 6. Bob and Alex live in Pensacola, and they want to visit their aunt who lives in Miami. On the way, they want to stop and visit their cousins in Jacksonville. They need to calculate the distance they will travel from Pensacola to Miami, stopping in Jacksonville. On a map, the scale of miles shows that 1 cm represents 50 miles. Pensacola to Jacksonville is 7 cm, and Jacksonville to Miami is 6.5 cm. How many miles will they travel?

Answer: _____ miles

★★★★ 7. Name a ten-digit number such that:

The first digit on the left tells how many *zeros* are in the number.
The second digit from the left tells how many *ones* are in the number.
The third digit from the left tells how many *twos* are in the number.
The fourth digit from the left tells how many *threes* are in the number.
The fifth digit from the left tells how many *fours* are in the number.
The sixth digit from the left tells how many *fives* are in the number.
The seventh digit from the left tells how many *sixes* are in the number.
The eighth digit from the left tells how many *sevens* are in the number.
The ninth digit from the left tells how many *eights* are in the number.
The tenth digit from the left tells how many *nines* are in the number.

Answer: _____