1) Find the unique whole number whose square and cube in base ten together use each of the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. (Note: the box below does not mean that the square has to have 3 digits and the cube 7 digits.)

\[ x^2 = \# @ \% \]
\[ x^3 = $* & ! ~ \diamond \circ \]

2) This type of problem is called ‘Cell Block’. Fill the grid by collecting boxes into rectangular groups. Each group must contain exactly one box with a number in it, and the number of boxes must match that number. Each group of boxes must be in the form of a square or a rectangle.
3) Each of the numbers in the circles below are the sum of the numbers in the two circles below it. What is the value in the top circle?

![Circle Diagram]

4) This is called a ‘Futoshiki’ Puzzle. Each row and column must have each of the numbers 1, 2, 3, and 4 in it exactly once. Whenever there is a ‘less than’ symbol between two boxes the two numbers in them must satisfy this relationship. Fill in the missing boxes.

![Futoshiki Puzzle]

5) Given the following isosceles triangle, find the angle labeled ‘x’.

![Isosceles Triangle]