Problem

Each square in the Mystery Grid at right contains one of the digits
1, 2, ..., 9. Use the clues below to decide which digit goes where.
(Read ALL the clues before you start.)

Clues:

1. The four corner squares contain even numbers.

2. The greatest number is in the middle.

3. Column A contains the second-, third-, and fourth-greatest
   numbers, in descending order.

4. Column C contains all the factors of 4.

5. Row 3 contains only factors of 6.

Check your solution by making sure the clues are all satisfied.

Extension:

1. Given the Mystery Grid solution shown at right, and the
   mathematical words *factor, least, greatest, consecutive, as-
   cending, descending, odd, even*, use at least four of these words
   to create a set of 4 - 6 clues which lead to this solution.

	A	B	C
1	2	7	5
2	8	1	4
3	3	9	6

Hints

Suggestions:

Extension:

1. You may wish to review the meanings of the terms listed in the problem.

2. Once students have created a set of clues for the Mystery Grid, have them trade clues with a classmate. Then, using a blank grid, they can try each other's clues to see whether they lead correctly to the given Grid, and whether or not all the clues are needed.

Solution

Clues 2 and 3 tell us that the middle number is 9, and column A is 8, 7, 6, in order downward. Clues 1 and 4 tell us column C contains either 2, 1, 4, or 4, 1, 2. Clues 3 and 5 tell us row 3 contains 6, 3, 2, since 1 is already used in the middle of column C, and 4 is not a factor of 6. Thus the remaining number, 5, must go at the top of column B.

	A	B	C
1	8	5	4
2	7	9	1
3	6	3	2

Extension:

Many solutions are possible. The important thing is that the set of clues must uniquely determine the given Mystery Grid. Select two or three solutions and work with the class to 'solve' the problem directly with the suggested clues, in order to verify that they work.