

Problem of the Block - Block 7



William lives on a street whose house numbers range from 8 to 100. Lisa wants to know William's house number. Lisa and William have the following conversation:

- Lisa: Is your house number larger than 50? William answers, but does not tell the truth.
- Lisa: Is your house number a multiple of 4? William answers, but again not truthfully.
- Lisa: Is your house number a perfect square? This time William answers truthfully.
- Lisa: I will know your house number if you tell me whether or not the first digit is a 3. Williams answers, but we don't know whether he answers truthfully or not.

At this point Lisa (who thinks William always tells the truth) guesses William's house number, but of course she is wrong. What is William's house number? Be sure to include your logic detailing how you came to your answer.



Turn in solutions to Dr. S in Law 204 or by email at tskorczewski@cornellcollege.edu by April 16. The Math Faculty can give hints or pose leading questions to help you get started or get past a hump. The winning solution which earns the bonus points for the yearly competition will be the submission that is the best written, not necessarily the first. Submitting solutions to the Problem of the Block may earn culture points toward the math major. For more information about the Problem of the Block and to print off your own copy visit <http://www.cornellcollege.edu/mathematics/problem-of-the-block/index.shtml>.