

Math Problems

Albert and Bernard have just met Cheryl and want to know when her birthday is. Cheryl says "I'm not going to tell you, but I'll give you some clues." She writes down a list of 10 dates:

May 15, May 16, May 19

June 17, June 18

July 14, July 16

August 14, August 15, August 17

"My birthday is one of these," she says. Then Cheryl whispers in Albert's ear the month of her birthday. To Bernard, she whispers the day. Albert and Bernard think for a minute and the following dialogue ensues:

Albert: I don't know when Cheryl's birthday is, but I know that Bernard doesn't know either.

Bernard: I didn't know Cheryl's birthday at first, but now I do.

Albert: Well, now I know, too!

When is Cheryl's birthday?

If one wishes to color the integers so that every two integers that differ by a factorial get different colors, what is the fewest number of colors necessary?

Satogaeri (Going Home)

The regions enclosed by bold lines, are called "Homes." Move the circles in a straight line, vertically or horizontally, so that each home contains only one circle. The numbers in the circles indicate exactly how many cells they must move.. Circles without numbers may move any distance, but some of them do not move. The circles cannot cross the tracks of other circles and cannot go over other circles.

