

Internet Sensations

There have been a few viral math Internet sensation questions in the past year. Try your problem-solving skills here with a couple of them. (Answers are provided at the websites listed in the footnotes.)

1. The first problem is from Britain's 2015 General Certificate of Secondary Education (GCSE) exam, which is given to 16-year-olds.¹

There are n sweets in a bag.

Six of the sweets are orange.

The rest of the sweets are yellow.

Hannah takes at random a sweet from the bag.

She eats the sweet.

Hannah then takes at random another sweet from the bag.

She eats the sweet.

The probability that Hannah eats two orange sweets is $\frac{1}{3}$.

(a) Show that $n^2 - n - 90 = 0$.

(b) Solve $n^2 - n - 90 = 0$ to find the value of n .

1. www.bbc.com/news/blogs-trending-33029606

2. The second problem is from Singapore and is said to be given to high-school-aged math students.²

Albert and Bernard just met Cheryl. "When's your birthday?" Albert asked Cheryl.

Cheryl thought a second and said, "I'm not going to tell you, but I'll give you some clues." She wrote 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 said.

Then Cheryl whispered in Albert's ear the month—and only the month—of her birthday. To Bernard, she whispered the day, and only the day.

"Can you figure it out now?" she asked Albert.

Albert said, "I don't know when your birthday is, but I know Bernard doesn't know, either."

Bernard said, "I didn't know originally, but now I do."

Albert said, "Well, now I know, too!"

When is Cheryl's birthday?

2. www.bdcwire.com/singapore-math-problem-solution