

# Singapore high school maths problem stumps the Internet

April 14 2015, by Bhavan Jaipragas

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A maths problem that first appeared in a test for Singapore's elite high school students has baffled Internet users around the world after it went viral

A maths problem that first appeared in a test for Singapore's elite high school students has baffled Internet users around the world after it went viral, prompting a rush of attempts to solve it.

The question, involving a girl asking two boys to guess her birthday after

giving them scant clues, first appeared in an April 8 test organised by the Singapore and Asian School Math Olympiads (SASMO).

It was meant for 15- and 16-year-old elite secondary school students, but swiftly went global after a local television news presenter posted it on his Facebook page Saturday.

In the question, Cheryl gives her new friends Albert and Bernard 10 possible dates when they enquired about her birthday, before separately giving each of them further clues.

Test-takers are then asked to use logic to deduce Cheryl's birthday using a short conversation between the two boys about the information given to them.

By Monday Internet users around the world were posting meticulously detailed answers to the puzzle on social media networks such as Facebook and Reddit, only to prompt a slew of comments disputing their findings and methodology.

Others posted sardonic comments about "Coy Cheryl".

"Cheryl obviously didn't want Albert and Bernard at her party. Should have taken the hint when Cheryl decided to play this little game," wrote David Leong on Facebook.

The hashtag #cherylsbirthday also trended on Twitter, while some people created funny memes about the puzzle. "If Math would grow up and solve its own problems, that'd be great," read one such meme.

**Singaporean brain teaser**

Set by the Singapore and East Asian School Math Olympiad

**The problem**

- Albert and Bernard want to know when Cheryl's birthday is
- Instead of telling them she gives them 10 possible dates
- She tells Albert the month, Bernard the date

**Albert:** I don't know when Cheryl's birthday is, but I know that Bernard does not know too.

**Bernard:** At first I don't know when Cheryl's birthday is, but I know now.

**Albert:** Then I also know when Cheryl's birthday is.

**Possible dates**



**The inference**

**Albert:** I don't know when Cheryl's birthday is, but I know that Bernard does not know too.

*if Bernard had a number 20 or 31 he would know the answer*



*if Albert knows that Bernard does not have 20 or 31 then he must be*  
*because Albert does not know May or June*



**Bernard:** At first I don't know when Cheryl's birthday is, but I know now.

*if Bernard had a 14 he would not know the answer*



**Albert:** Then I also know when Cheryl's birthday is.

*if Albert had August, Bernard would not know the answer*



Graphic on a Singaporean maths problem that has baffled people around the world after going viral

The "mind-boggling" problem also made the mainstream media, with leading websites including the Guardian newspaper and BuzzFeed publishing articles about the puzzle.

**Model answer**

In a Facebook post late Monday, SASMO provided the full question and a model answer, which can be found at [facebook.com/4sasmo/posts/983396811695295](https://www.facebook.com/4sasmo/posts/983396811695295)" target="\_blank">[www.facebook.com/4sasmo/posts/983396811695295](https://www.facebook.com/4sasmo/posts/983396811695295).

The post also clarified earlier erroneous reports that the question was not posed to primary school children, saying SASMO thought it important to specify the age of the students involved so "Singapore parents will not start to worry so much".

The question was "actually from the secondary 3 and secondary 4 SASMO contests held on April 8, 2015", it said, adding it was "meant to sift out the better students".

Following relentless but mostly friendly online debate about the question's difficulty level, SASMO's executive director Henry Ong on Tuesday afternoon issued another statement.

"We are pleased that this problem has generated so much interest and thinking from the public," Ong said.

"We are not saying this problem is for every student... but if this kind of problem can be used to stretch the better students to sharpen their analytical power, why not?"

Singapore is renowned worldwide for its national maths system, which has been emulated by schools in other developed countries and cities, including New York.

Singaporean pupils are ranked second in the world in mathematics according to the latest student assessment survey by the Organisation for Economic Cooperation and Development, beaten only by their counterparts in Shanghai.

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