

## The Puzzle Column

We think it might be fun and entertaining to introduce lightweight puzzles to our monthly newsletters to stimulate some curiosity and have our students (and faculty & staff!) have a go at solving them. Each newsletter carries a puzzle. We will post the names of the first 10 students who provide correct solutions in the next month's newsletter. Everyone is welcome to contribute new puzzles. Please email [Nagendra.gulur@unt.edu](mailto:Nagendra.gulur@unt.edu) for puzzle ideas and solutions to posted puzzles. Please start the subject line of your email with "PUZZLE:".

### November Puzzle

Find out Cheryl's Birthday. This puzzle appeared in the Singapore and Asian Schools Math Olympiad and went viral in 2015. The puzzle is:

Albert and Bernhard become friends with Cheryl and want to know when her birthday is. Cheryl, however, simply provides the month to Albert and the day of the month to Bernhard from a possible list of 10 dates shown below:

May		15	16			19
June				17	18	
July	14		16			
August	14	15		17		

(Albert does not know day of the month and Bernhard does not know the month)

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

Bernhard: 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.

So when is Cheryl's birthday?

(Solve this on your own, there are solutions posted on the web that you do not want to consider before you have attempted to solve this by yourself.)

As a bonus: extend Cheryl's birthday puzzle on the 3<sup>rd</sup> dimension – year she was born. Consider a 3<sup>rd</sup> friend David who has been told only the year she was born. Change the above table in order to make everything work in the 3-dimensional setting.