# Is 371 a Prime Number?*

Below is an episode from a lesson in the Y6 class of Ms Chambers.

Ms Chambers asks the students to work on the following problem:

*Is 371 a prime number?*

One of the students, **Neil**, complains that this is a very large number and that it would take very long to check all its possible divisors. Ms Chambers invites views from the class on Neil's complaint. Anna raises her hand and Ms Chambers invites her to speak.

**Anna**: I don't think this needs to take as long as Neil thinks: 371 is less than 400 and 400 is the square of 20. So, all we need to check is 1, 2, 3, 4, 5…. all the way to 20. Check all the numbers below 20.

Another student, Barack, then asks permission to speak.

**Barack**: Not even all of these! All we need to check is all primes below 20 and we are done!
A third student, Clive, waves his hand impatiently. Ms Chambers signals to him that he can speak.

**Clive**: What a waste of time! 1 is a prime number. 37 is a prime number. So 371 is a prime number! Problem solved!

'Thank you, all', says Ms Chambers, 'there are quite a few ideas floating around. Shall we take them one by one?'

Imagine you are the teacher of this class.

1. Solve the mathematical problem in the above episode. Justify your answer.
2. How would you respond to Anna?
3. How would you respond to Barack?
4. How would you respond to Clive?
5. How would you conclude the lesson in a way that provides a satisfactory response to the mathematical problem and appease Neil's exasperated comment?

---

* Based on activities and examination questions designed by Elena Nardi (e.nardi@uea.ac.uk) for use in UEA's BA Education Year 3 module *Children, teachers and mathematics: Changing public discourses about mathematics* between 2012 and 2016.