

## Problem of the Week

### Problem C

#### What's Not to Love?

At the start of the school year, students in Mr. Pi's class were asked the following question: "Do you love Math?" They were only allowed to answer "yes" or "no", and everyone had to answer. Of the 30 students in the class, 21 answered "yes" and 9 answered "no".

That day, with every student present, the probability of randomly selecting a student who answered the question "yes" was  $\frac{21}{30} = \frac{7}{10}$  and the probability of randomly selecting a student who answered the question "no" was  $\frac{9}{30} = \frac{3}{10}$ .

However, on one particular morning later in the year, the following information was known about the class:

- at least one of the students who had answered "yes" was absent and at least one of the students who had answered "no" was absent;
- more than half of the class was present; and
- the probability of randomly selecting a student who had answered the question "yes" was  $\frac{3}{4}$ .

Is there enough information to determine how many students were absent that particular morning? If yes, how many students were absent? If no, explain why not.

