

WARM-UP

Problem 1

- a) Individually, construct a factor tree for 360.
- b) Individually, construct a second factor tree for 360 in the following manner: first factor out the smallest factor of 360, then always factor out the smallest factor of any number that comes up in your factor tree.
- c) Compare your two factor trees to those of your teammates. Are the ones you constructed in a) identical? Are the ones you constructed in b) identical?
- d) Write a conjecture about your answer to part c).

Problem 2 If k divides n , which one of the following can be true: $k \leq n$ or $k \geq n$?

PROBLEMS

Problem 4 Do parts 3 and 4 of Activity 8M on page 168 of Beckmann.

Problem 5 Do Activity 8K on page 167 of Beckmann.

Problem 6 An elementary school has 1000 lockers, numbered from 1 to 1000, in a row in a hallway. The lockers are all closed. 1000 students get together and do the following:

1. The first student walks down the hallway and opens every locker that is closed and closes every locker that is open (so in fact they are opening each locker because at this point all of the lockers are closed).
2. The second student walks down the hallway and stops at lockers 2, 4, 6, etc., and opens the lockers that are closed and closes the lockers that are open (so in fact they close each locker that they stop at since at that point all of the lockers are open).
3. The third student walks down the hallway and stops at lockers 3, 6, 9, etc., and opens the lockers that are closed and closes the lockers that are open. (Does the student only open or close lockers or will they do both?)
4. The fourth student walks down the hallway and stops at lockers 4, 8, 12, etc., and opens the lockers that are closed and closes the lockers that are open.
5. The students continue in this manner until all 1000 students have gone.

At the end of all of this, how many lockers are open, and which ones?

(The rest of the problems are from Tuesday's worksheet if you didn't get to them.)

Problem 7 Do parts 1 a), 1 b) and part 3 of Activity 8B on page 159 of Beckmann. Which model for counting is each part of the activity using?

Problem 8 Do Activity 8A on page 157 of Beckmann.

Problem 9 Do Activity 8D on page 159 of Beckmann.