

Worksheet #2

Problem 1: On heavy trash day, you are allowed to put out 6 cubic yards of trash to be picked up by the trash man.

(a) Bill prefers to measure the garbage in cubic feet. Since there are 3 feet in a yard, Bill says “I am allowed to put out $6 \times 3 = 18$ cubic feet of trash.” Is Bill correct? What did he do wrong?

(b) How many cubic feet are in 6 cubic yards?

Problem 2: Suppose we want to build a giant dorm that will give every person in the world their own room. Let us suppose we give each person a cubic room with dimensions 10 ft. \times 10 ft. \times 10 ft., and that we put these rooms in a giant cubic dorm. (Don't worry about leaving space for hallways, etc.) How big would one side of this dorm have to be? Give your answer in both feet and miles.

Here is some information you might find useful:

- Let us estimate the population of the earth at 8 billion people.
(That is 8,000,000,000 people.)
- There are 5,280 feet in a mile.