

Moving Mount Fuji

(by Thilo Gross)

How many dump trucks would you need to move mount Fuji¹?



This is a classic job-interview question and we can find an answer by a so-called a Fermi estimate: We break the answer into little pieces, each easier than the question as a whole.

The volume of a pyramid is a a third of the volume of the box into which the pyramid would fit. Fuji is a mountain, not a pyramid, but we can use this formula to roughly estimate its volume

$$V =$$

So given this volume we can estimate the approximate mass of mount Fuji

$$M =$$

How many trucks would it need to move this mass?

$$N =$$

¹You may asume that the mountain is about 4km tall

Fermi Challenge

(by Thilo Gross)

Here are three quick questions. Try to use Fermi estimates to find answers.

I want to build a classical redbrick house in Bristol. It will be a 2 bedroom property. How many bricks do I need?

$$A =$$

A plumber in London cleans out the drains of a laundrette. This yields enough small change to fill a 5l bucket. Estimate the value of the change (in pound), assuming a typical mixture of coins.

$$B =$$

Consider a city with about 1 million residents, e.g. greater Manchester. How many playgrounds could we build on an area that is as large as the combined area taken up by parking spaces in the city?

$$C =$$

Now multiply your answers

$$A \cdot B \cdot C =$$