



The University of Georgia

Mathematics Education Program

J. Wilson, EMAT 6600

Million Drops of Water

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Goal: To make a decision on what to do with a million drops of water

Problem

If you had a million drops of water, would you be more likely to

drink it?

take a bath in it?

swim in it?



According to the 'general' or 8 x 8 rule, the average human should drink at least eight 8-ounce glasses of water (fluid) per day. This translates to roughly 0.6 gallon of water each day. How many drops of water would this translate to? According to our problem we want to relate or compare this 0.6 gallon of water to a million drops.



According to Answers.com, the average bathtub will hold 50 gallons when completely filled. How many drops of water would this translate to? According to our problem we want to relate or compare this 50 gallons of water to a million drops.



And according to the size pool that you want to swim in let us say you want to swim in a small pool then you would need about 18,000 gallons of water. According to our problem we want to relate or compare this 18,000 gallons of water to a million drops.

So let us see we have 1,000,000 drops of water. The difficulty here is that there is not definite measure for the volume of a drop so we have to make our own estimation or use estimates that others have made.

After searching for estimations, I took an estimation of drops for gallon of water from wiki answers. By this site's estimation there are 90840 Drops in 1 Gallon. I

found other sites that give estimates very close to this, so I used it as a kind of ballpark figure.

Now if there are 90,840 drops in a gallon

The average person would need $90,840 * 0.6 = 54,504$ drops. Clearly this is way less than a million drops. So if I had a million drops of water now I would not want to drink it, all at once that is! However, I could drink it over 18 days.

The average bathtub needs 50 gallons. If there are 90,840 drops in a gallon, then the average bathtub needs $90,840 * 50 = 4,542,000$ drops of water.

Consider a million drops is about one quarter of the amount needed for the average bathtub. So, I might not get a really good bath from the million drops of water.

Now if the million drops of water was barely enough for the bath. Would I really want to swim in it? Certainly not. But you might want to use it for your kiddies' pool.
