

# Go Jump in the Lake

## Lake Tahoe

1,645 feet deep  
191.6 square miles

## Average Human Volume

2.176 cubic feet

## Population

7,800,000,000 people

## Total volume increase from population

$$\begin{aligned} 16,972,800,000 \text{ cubic feet} &= 7,800,000,000 \times 2.176 \\ 1 \text{ cubic mile} &= 147,197,952,000 \text{ cubic feet} \\ 16,972,800,000 \text{ cubic feet} &= 0.11530595208281200 \text{ cubic miles} \end{aligned}$$

## Water Rise - spread over 191.6 square miles

$$\begin{aligned} 0.11530595208281200 \text{ cubic miles} \\ \text{divided by } 191.60 &= 0.0006018055954217720 \text{ miles rise in water} \\ 1 \text{ mile} &= 5,280 \text{ feet} \\ 0.0006018055954217720 \text{ miles} &= 3.1775335438269600 \text{ feet rise in water} \end{aligned}$$

## Cross Check Answer

$$\begin{aligned} \text{Area of a Circle } A &= \text{Pi} \times r^2 = 191.6 \text{ square miles} \\ r &= \sqrt{A/\text{Pi}} \\ r &= 7.8094925694832600 \text{ miles} \end{aligned}$$

$$\begin{aligned} \text{Volume of a cylinder } &= \text{pi} \times r^2 \times h = 0.1153059520828120000 \text{ cubic miles} \\ r &= 7.80949256948326000 \text{ miles} \\ h &= 0.0006018055954217720 \text{ miles rise in water} \\ &= 3.1775335438269600 \text{ feet rise in water} \end{aligned}$$