

A Mole of Pennies

$$\text{mi} \parallel \frac{1 \text{ mole Pennies}}{1 \text{ mol}} \times \frac{6.022 \times 10^{23} \text{ pennies}}{1 \text{ penny}} \times \frac{0.06 \text{ in}}{12 \text{ in}} \times \frac{1 \text{ ft}}{5280 \text{ ft}} \times \frac{1 \text{ mi}}{3.67 \times 10^9 \text{ mi}} = 1.55 \times 10^8 \text{ times}$$

E → P

- a mole of pennies stacked from the earth to pluto would create 1.55×10^8 stacks of pennies

- This stack would be $\left(\sqrt{1.55 \times 10^8} \right)$ pennies on a side = 1.25×10^4 pennies by 1.25×10^4 pennies

$$- \parallel \frac{1.25 \times 10^4 \text{ pennies}}{1 \text{ penny}} \times \frac{0.75 \text{ in}}{12 \text{ in}} \times \frac{1 \text{ ft}}{5280 \text{ ft}} = 781 \text{ ft square stack}$$

- the capital is 437' x 437'

Data

penny = 0.06 in thick

= 0.75 in diameter

Earth to Pluto - 3.67×10^9 mi (average distance)

