

## Measurements with Google Earth—Solutions

Measure the following in **CENTIMETERS**. Input your values in the table below.  
*Make sure that you use units.*

Your Measurements	
The Thing You Are Measuring	Its Measurement (Don't Forget Units)
Your Height	160 centimeters (This is Ms. Clanton's height; yours will probably be different).
The Length of Your Step	60 centimeters (This is Ms. Clanton's measurement; yours will probably be different).

Count the number of steps you take in 10 seconds while walking at a normal, leisurely pace, and input it into the table below. *Make sure that you use the appropriate units.*

Counting Table	
The Number of Steps You Take in 10 Seconds	10 steps (This is Ms. Clanton's measurement; yours will probably be different).

Multiply the number of steps you take in 10 seconds (from the table above) by 6 to get the number of steps you take in one minute.

Calculations Table
(The Number of Steps You Take in 10 Seconds) $\times$ (6) = The Number of Steps You Take in One Minute
10 steps $\times$ 6 = 60 steps per minute

Use the ruler tool on Google Earth to measure the following quantities in METERS, and type your results in the table below. Report your answers to two decimal places.

Your Google Earth Measurements	
Measure the Distance Between the Two Cities Listed	The Distance/Displacement Between the Two Cities (Don't Forget Units)
The DISTANCE from the Center ASUMH to the Center of Tokyo	9,253,299.63 meters
The DISPLACEMENT from the Center of New York City to the Center of Los Angeles, California Hint: Displacement must include a direction.	3,879,040.22 meters

### Here is an Example Problem

- How many Ms. Clantons (lying down head-to-toe) would it take to reach from the center of Sacramento, California to the center of Rome, Italy?

Ms. Clanton's height = 1.6 meters

Distance between Sacramento and Rome = 9,925,000 meters

$$\frac{9,925,000m}{1.6m / Ms.Clanton} = 6,203,152Ms.Clantons$$

## Now, You Try Some Problems of Your Own

1. How many of you (lying head-to-toe) would it take to reach from the center of ASUMH to the center of Tokyo? Show your work in the text box below.

These calculations are done using Ms. Clanton's measurements. Your calculations will probably be different.

Ms. Clanton's height = 1.6 meters; distance between ASUMH and Tokyo = 9,253,299.63 meters

$$\frac{9253299.63m}{1.6m / Ms.Clanton} = 5783312.27Ms.Clantons$$

2. If you were to walk from the center of New York City to the center of Los Angeles, California, how many **DAYS** would it take? Show your work in the text box below. *Hint: time = distance / speed.*

Ms. Clanton can take 60 steps in 1 minute. In 1 hour, Ms. Clanton can take 3600 steps. In 1 day, Ms. Clanton can take (3600 steps) x 24 = 86,400 steps.

How steps would Ms. Clanton take between New York City and Los Angeles? The distance from New York City to Los Angeles is 3,879,040.22 meters. The length of Ms. Clanton's step is 60 centimeters = .6 meters.

$$\frac{3879040.22meters}{.6meters / step} = 6465067.03steps$$

$$\frac{6465067.03steps}{86,400steps / day} = 74.83days$$

Ms. Clanton walks very slowly!