

## APES Math Practice #1

Given:

$$1 \text{ acre} = 43,550 \text{ ft}^2$$

$$1 \text{ ha} = 2.471 \text{ acres}$$

$$1 \text{ mi}^2 = 640 \text{ acres}$$

$$1 \text{ acre} = .4047 \text{ hectares (ha)}$$

$$1 \text{ ha} = 100\text{m} \times 100\text{m} = 10,000\text{m}^2$$

$$1 \text{ mile} = 1.61 \text{ km}$$

City of Beachwood is 5.34 square miles in area. Surface water = .01 mi<sup>2</sup>.

City of Solon is 20.89 mi<sup>2</sup>, with 1,186 acres of park, green space, and .13mi<sup>2</sup> water.

**Show the set up...show units...show dimensional analysis as you cancel units:**

1. For Beachwood, how many acres of land are there?
2. How many hectares are there?
3. What % of the land area in Beachwood is covered by surface water?
4. How much land area is there in Beachwood in square kilometers?
5. For Solon, how many acres of land are there?
6. How many hectares are there?
7. How many km<sup>2</sup>?

8. What % of land area in Solon is park, green space?

9. What % of land area is covered by surface water?

Population: Beachwood's pop. is 11,844...Solon's is 25, 947.

10. What is the population density (people/area) in Beachwood:

a) per square mile

b) per acre

c) per hectare

11. What is the population density (people/area) in Solon:

a) per square mile

b) per acre

c) per hectare