Population Density

Population density is determined by dividing the number of people in an area by the area itself.

Population Density = $\frac{\textit{number of people}}{\textit{square miles}}$

1. A city has a population of 6,688 people. The city is approximately 7.267 square miles. How many people per square mile live in the city?

Pop density = $\frac{6688}{7.267}$ = 920 people per sq. mile

2. What is the population density in our school? The population is 3000 and the surface of 323,727 square feet.

Pop density = $\frac{3000}{323727}$ = 0.009 people per sq. foot

3. In Manhattan, there are 15 Coffee Shops per 100,000 people.

Manhattan has approximately 1,602,000 people. How many Coffee Shops are there?

$\frac{\text{c.s.}}{\text{people}}$ $\frac{15}{100{,}000} = \frac{x}{1{,}602{,}000}$ $x = 240$ coffee shops

Manhattan is approximately 34 square miles. What is the density of Coffee Shops per square mile?

coffee shop density = $\frac{\text{coffee shop}}{\text{sq. miles}} = \frac{240}{34} = 7$ coffee shops per sq. mile

4. The population density of a certain 750 square mile area in 1980 was 1077 people per square mile. In 1990, the population density was 1137 people per square mile. In 2000, the population density was 1144 people per square mile. In 2010, the population density was 1193 people per square mile.

What was the population of this area in 1980?

Pop density = $\frac{\#\text{ people}}{\text{sq. miles}}$ $750 \cdot 1077 = \frac{\#\text{ people}}{750} \cdot 750$

807,750 people = # people

How much did the population change between 1980 and 2010?

807,750 894,750

$750 \cdot 1193 = \frac{\#\text{ people}}{750} \cdot 750$

894,750 people = # people

The pop. increased by 87,000 people from 1980 to 2010.