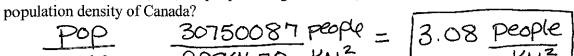**Practice Population Math Worksheet**   *Key*

1. In 2000, there were 30,750,087 people living in Canada, which has a total area of 9,984,670 km². What was the population density of Canada?

$$\frac{pop}{area} \qquad \frac{30750087 \text{ people}}{9984670 \text{ km}^2} = \boxed{3.08 \frac{people}{km^2}}$$

2. In reality, there are a lot of fresh water lakes in Canada, about 891,163 km² of lakes. What was the population density of terrestrial Canada in 2000?

$$\frac{30750087 \text{ people}}{9093507 \text{ km}^2} = \boxed{3.38 \frac{people}{km^2}}$$

3. In 1999 with a beginning population of 30,491,000 people, there were 335,500 births in Canada. What was the birth rate, expressed as per 1000 (crude birth rate)?

$$\frac{335,500 \text{ births}}{30,491,000 \text{ ppl}} \qquad \boxed{11/1000} \quad \text{or} \quad \boxed{CBR = 11}$$

4. In Canada during the same year there were 225,500 deaths, 205,711 immigrants and 41,142 emigrants. What was the growth rate for Canada, expressed as a percentage?
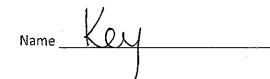
$$(335,500 + 205,711) - (225,500 + 41,142) = \frac{274,569}{30491000} = \times 100 = \boxed{0.9\%}$$

5. How many years will it take for Canada's population to double?

$$\frac{70}{.9} = \boxed{77.8 \text{ yrs}}$$

6. The population density of California is about 82 people per km². How much more densely populated is California than Canada (total area)? Canada = 3.38 ppl/km²   CA = 82 ppl/km²

26.6 times more dense $\boxed{diff = 78.62/km^2}$

7. In 1997, the population of Hawaii was 1,115,274 on a total surface area of 6,423 square miles. What was the population density of Hawaii?

$$\frac{1,115,274 \text{ ppl}}{6423 \text{ mi}^2} = \boxed{173.64 \frac{ppl}{mi^2}}$$

AP Environmental Science
Population Math Problems.
Show all work

Name ___Key___

1. What is the Birth rate for a country that has a population of 120,000 and 2400 births per year?

$$\frac{2400}{120,000} = 0.02 \quad \boxed{2\%}$$

2. What is the birth rate for a country with 35 births per thousand?

$$\frac{35}{1000} = 0.035 \quad \boxed{3.5\%}$$

3. What is the death rate for a country that has a population of 1,500,000 and 60,000 deaths per year?

$$\frac{60,000}{1,500,000} = 0.04 \quad \boxed{4\%}$$

4. What is the growth rate for a country that has a total population of 11,000,000 with 320,000 births and 650,000 deaths?

$$\frac{320,000 - 650,000}{11,000,000} = -0.03 \quad \boxed{-3\%}$$

5. What is the growth rate for a country that has 60,000 births and 50,000 deaths per year along with 20,000 people who immigrate in and 10,000 people who emigrate out? The total population is 20,000,000.

$$(60,000 + 20,000) - (50,000 + 10,000)$$

$$\frac{20,000}{20,000,000} = 0.001 \quad \boxed{0.1\%}$$

6. Belgium has a growth rate of 0.1% In how many years will it double its population?

$$\frac{70}{.1} = \boxed{700 \text{ yrs}}$$

7. Libya is doubling its population every 19 years. ~~What is the growth rate?~~

$$\frac{70}{V} = 19 \text{ yrs} \quad \boxed{3.68\%}$$

8. The country of Togo in Western Africa has a growth rate of 3.5%. It's present population is 4.8 million. How long will it take for Togo to double its population?

$$\frac{70}{3.5} = \boxed{20 \text{ yrs to double}}$$

9. How long will it take Togo to reach 19.2 million people?

$$20 \text{ yrs} = 9.6$$
$$\boxed{40 \text{ yrs}} = 19.2$$