

**AIM:****1. Population change is a result of the interplay between 3 factors:**

A.

B.

C.

**2. Calculating Population Growth Rate (%):**Formula:  $(\text{CBR}-\text{CDR}) \times 100$ Example 1:

What is the growth rate of a population that experiences 40 births per 1000 people per year and 20 deaths per 1000 people per year?

Example 2:

What is the growth rate of a population that experiences 15 births per 1000 people per year and 20 deaths per 1000 people per year?

**3. Local Population Change Factoring in Migration (%):**Example:

Use all of the following information to calculate a population's growth rate:

*13 births per 1000 people per year**8 immigrants per 1000 people per year**6 deaths per 1000 people per year**2 emigrants per 1000 people per year*

4. Zero Population Growth (ZPG):  $(\text{CBR} + \text{ir}) = (\text{CDR} + \text{er})$

### 5. Population Doubling Time:

Doubling Time Formula: - "the rule of 70"

$$\text{Doubling Time (years)} = \frac{70}{\% \text{ growth rate (r)}}$$

#### Examples:

- Presently, the world's annual growth rate is 1.08%. How many years until the population doubles?
- If the growth rate of a population is .25%, how many years until the population doubles?

### Human Population Doubling Time

