

Fertility and reproductive behaviour of the population

Calculation problems (10)

Problem 1. Crude birth rate

Total live births in a year = **480,000**

Total population = **24,000,000**

Calculate the **Crude birth rate (CBR)** per 1,000 population.

Problem 2. General fertility rate

Live births = **350,000**

Women aged 15–49 = **7,000,000**

Calculate the **General fertility rate (GFR)** per 1,000 women.

Problem 3. Total fertility rate (TFR)

Age-specific fertility rates (per 1,000 women):

15–19: 40

20–24: 120

25–29: 110

30–34: 70

35–39: 30

40–44: 10

45–49: 2

Calculate the **TFR** (sum of rates $\times 5 / 1000$).

Problem 4. Replacement level analysis

Country A TFR = **1.6**

Country B TFR = **2.1**

Which country is at **replacement fertility level** and what does it imply?

Problem 5. Age-specific fertility rate

Births among women aged 20–24 = **95,000**

Women aged 20–24 = **1,200,000**

Calculate the **ASFR** per 1,000 women.

Problem 6. Net reproduction rate (NRR) interpretation

NRR = **0.9**

Explain what this value indicates about population replacement.

Problem 7. Fertility decline

TFR decreased from **3.5 to 2.4** over 15 years.

Calculate the **percentage decline**.

Problem 8. Birth interval analysis

Average birth interval increased from **2.5 years to 3.2 years**.

By what percentage did the interval increase?

Problem 9. Urban vs rural fertility

Urban TFR = **1.9**

Rural TFR = **3.1**

Calculate the difference and briefly interpret.

Problem 10. Cohort fertility

A cohort of 1,000 women has given birth to **1,850 children** by age 45.

Calculate the **completed cohort fertility rate**.

Multiple-Choice Test (20 Questions)

1. Fertility refers to:
 - A) Ability to reproduce biologically
 - B) Actual number of births
 - C) Infant survival
 - D) Population growth
2. The Crude Birth Rate measures:
 - A) Births per 1,000 women
 - B) Births per 1,000 population
 - C) Births per 100 households
 - D) Births per year only
3. Total Fertility Rate represents:
 - A) Annual births
 - B) Lifetime births per woman

- C) Birth rate of infants
 - D) Replacement level
4. Replacement fertility level is approximately:
- A) 1.5
 - B) 2.1
 - C) 3.0
 - D) 4.0
5. Age-specific fertility rate measures:
- A) Births by region
 - B) Births by age group
 - C) Births by income
 - D) Births by education
6. Reproductive behaviour includes:
- A) Mortality only
 - B) Marriage, contraception, timing of births
 - C) Migration
 - D) Urbanization
7. Fertility decline is often associated with:
- A) Lower education
 - B) Higher urbanization
 - C) High mortality
 - D) Low income
8. Higher female education generally:
- A) Increases fertility
 - B) Has no effect
 - C) Reduces fertility
 - D) Eliminates fertility
9. General Fertility Rate uses:
- A) Total population
 - B) Women aged 15–49
 - C) Children only
 - D) Men
10. Net reproduction rate measures:
- A) Birth intervals
 - B) Daughters replacing mothers
 - C) Population growth
 - D) Marriage rate
11. Fertility transition refers to:
- A) Migration changes
 - B) Decline from high to low fertility
 - C) Mortality increase
 - D) Urban growth
12. Early marriage usually leads to:
- A) Lower fertility
 - B) Higher fertility

- C) No change
 - D) Population decline
13. Contraception primarily affects:
- A) Mortality
 - B) Migration
 - C) Fertility levels
 - D) Life expectancy
14. Cohort fertility measures:
- A) Annual births
 - B) Lifetime births of a group
 - C) Births by region
 - D) Population size
15. Fertility behaviour is influenced by:
- A) Social norms
 - B) Climate only
 - C) Geography only
 - D) Technology only
16. A TFR below 2.1 leads to:
- A) Population growth
 - B) Population replacement
 - C) Population ageing
 - D) Baby boom
17. High fertility is typical in:
- A) High-income countries
 - B) Developing countries
 - C) Urban areas only
 - D) Ageing societies
18. Delayed childbirth usually:
- A) Raises fertility
 - B) Lowers completed fertility
 - C) Has no effect
 - D) Eliminates births
19. Fertility policies aim to:
- A) Control migration
 - B) Influence birth levels
 - C) Reduce mortality
 - D) Increase life expectancy
20. Fertility is a key component of:
- A) Economic growth only
 - B) Demographic change
 - C) Climate policy
 - D) Trade