



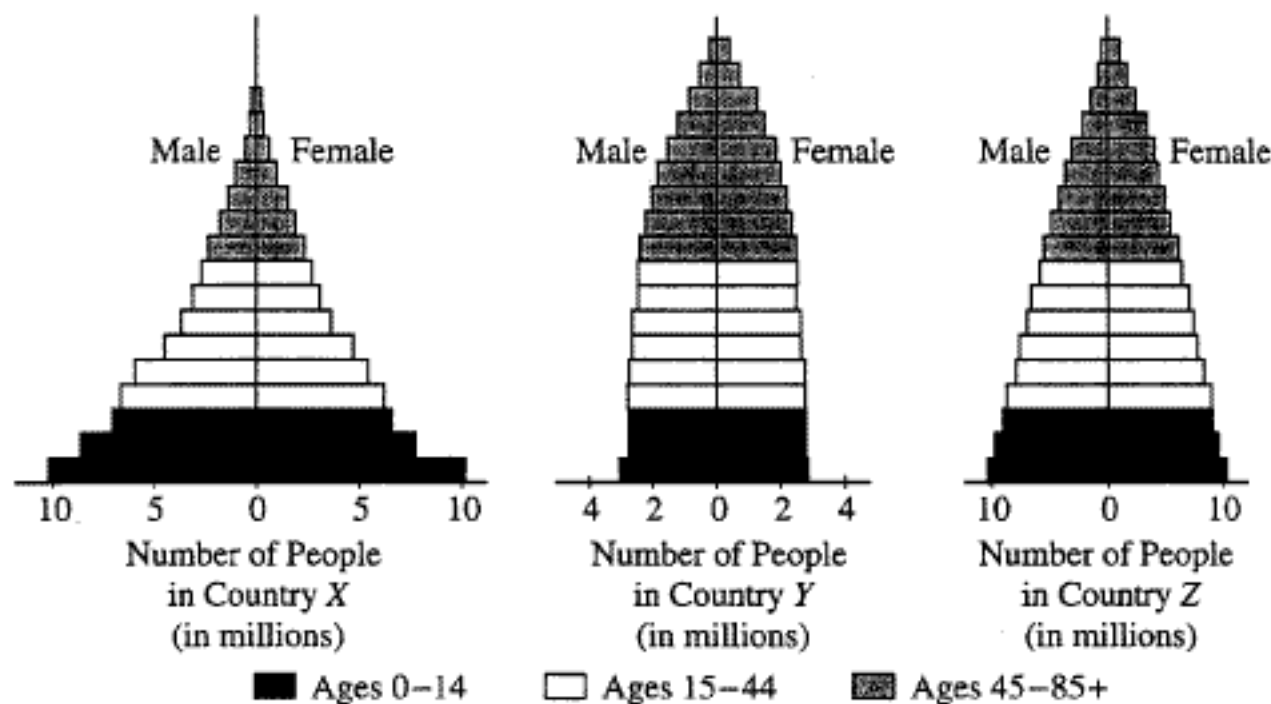
AP Environmental Science 2000 Student Samples

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4. The figures above show the age structures of human populations in three countries, X, Y and Z.
- Which of the three countries has the largest rate of population growth? Which has the smallest rate? Explain.
 - Compare the infant mortality rates that are likely in Countries X and Y. Explain your reasoning.
 - Describe the changes in both the birth rate and the death rate for a country making the transition from a preindustrial society to an industrial society.
 - Describe one incentive that the government of a country could offer its citizens that would favor a reduction in the growth rate of its population. Explain how this incentive would work, and describe one possible drawback.

a) Country X has the largest rate of population growth while Country Y has the least population growth rate maintaining a fairly ~~even~~ balanced population. The reason for this is in the productive or prereproductive populations. Country X has a large pre-reproductive population which will soon become its reproductive age and will therefore have more children thus causing an increased birth rate and a constant crude death rate. Country

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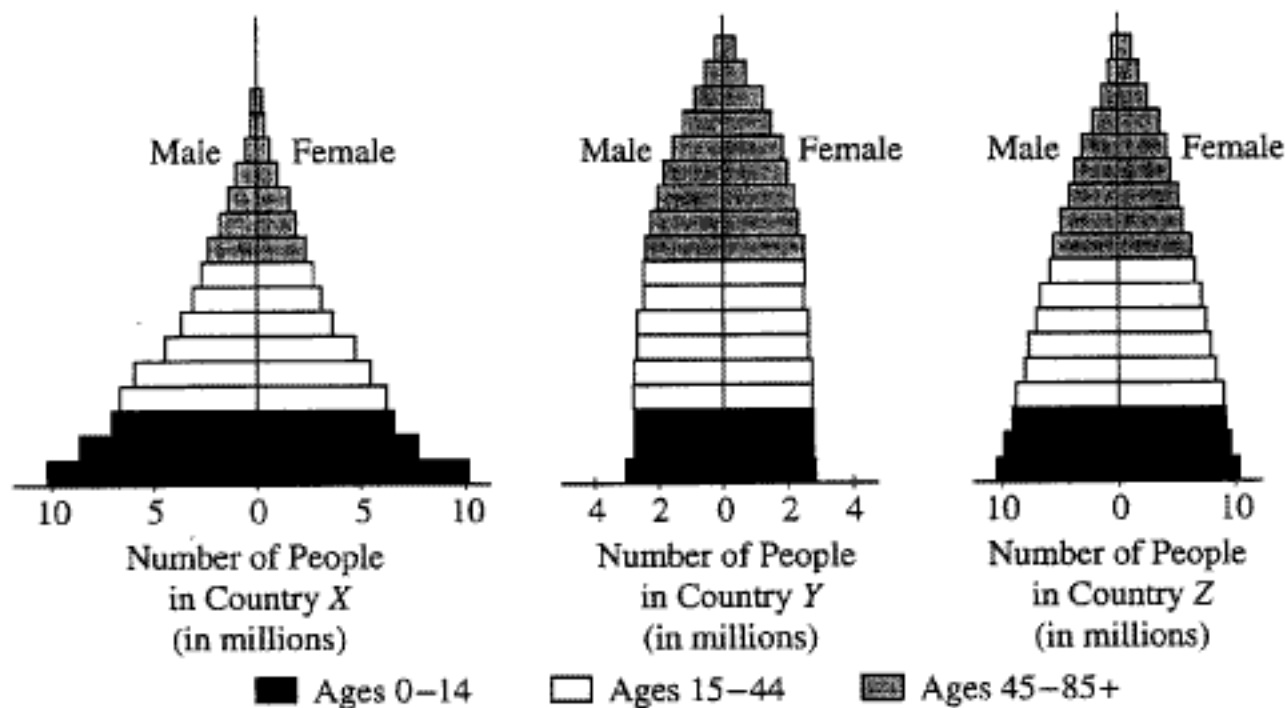
Y on the other hand has reached a place where the reproductive population and the ~~post~~ pre-reproductive population are in all respects equal.

B) Country Y will have a lower infant mortality rate than country X would have. The age pyramid for country X shows an undeveloped country with decreased technology while country Y is a developed country and more likely has the resources and technology to prevent many of the infant mortalities that occur in the third world countries.

c) As a country is preindustrialized both the death rates and birth rates are high. As a country begins to industrialize technology lowers the death rate but the birth rate remains high as a result of the culture. As the country becomes more industrialized, the standard of living increases, education becomes available about birth control, and women's role in society changes - causing a decline in birth rates with the declining death rate. Once a country has reached industrialization, the birth rates and death rates are low mainly as a result of technology, education, and a changing society.

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D) One incentive that a government could offer to its citizens that would favor reduction in the growth rate would be a tax break for families with only one or no children. For economical reasons the family would choose not have children. There is a drawback though. Some families need more children so that they can work and help support the family, also parents enjoy children so that they can take care of them. Another issue is in places where one sex is valued above the other, limits on children promote abortions and killing infantes at birth as has happened in China.



4. The figures above show the age structures of human populations in three countries, X, Y and Z.
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 - Compare the infant mortality rates that are likely in Countries X and Y. Explain your reasoning.
 - Describe the changes in both the birth rate and the death rate for a country making the transition from a preindustrial society to an industrial society.
 - Describe one incentive that the government of a country could offer its citizens that would favor a reduction in the growth rate of its population. Explain how this incentive would work, and describe one possible drawback.

a. Country X has the largest rate of population growth. The graph is bottom-heavy, and most of the population is within reproductive age.

Country Y has the smallest rate of population growth. The graph is approximately balanced, and there are about equally the number of reproductive age people and the number of nonreproductive people. The birth rate would be equal or less than the death rate, while in Country X, the birth rate is far above the death rate.

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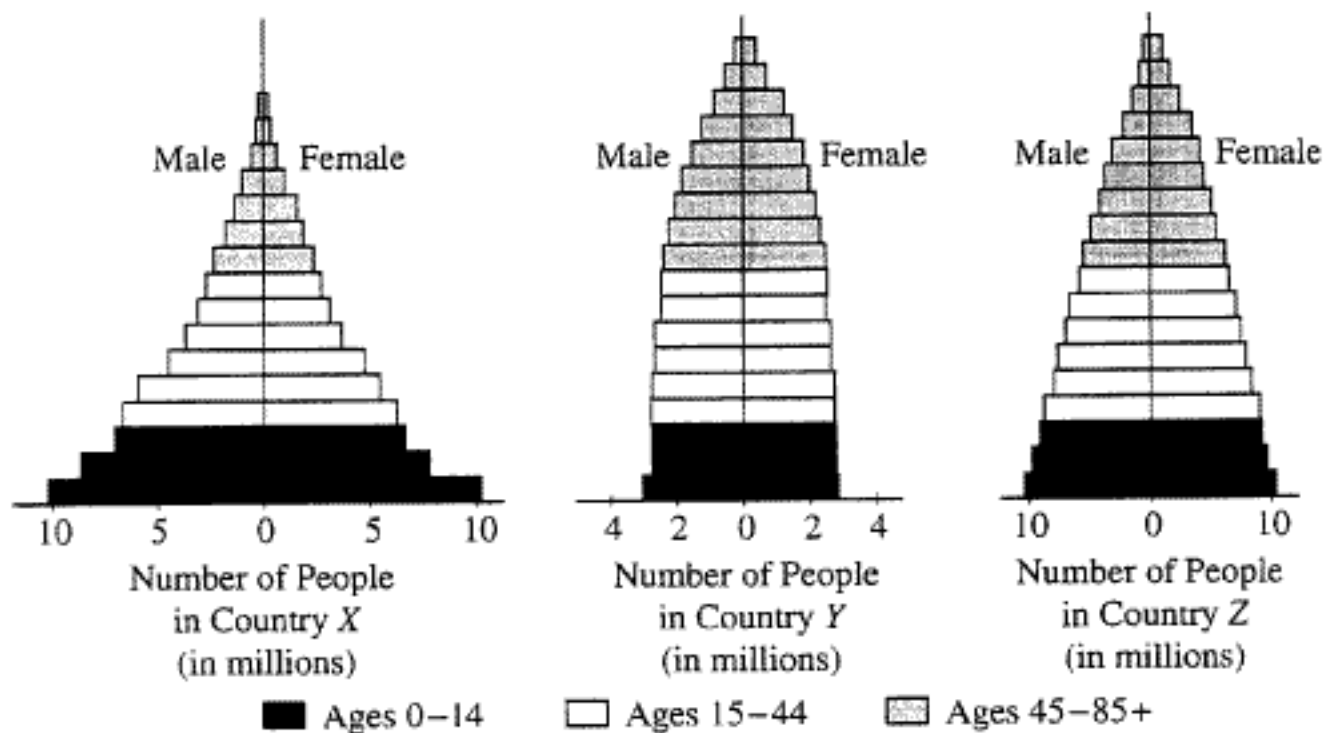
b. In Country X, the infant mortality rates are likely to be high. This country is likely to be a LDC, a less developed country. Prenatal care and sex education is less advanced, and there are too many infants per caregiver. Infants are more likely to die in this country.

In Country Y, the infant mortality rates are likely to be low. This country is likely to be an industrialized MDC. Prenatal care and sex education would be advanced, and there are many caregivers per infant. Infants are less likely to die in this country.

c. In a country making the transition from a preindustrial society to an industrial society, the birth rates will decrease, as will the death rates. Less helping hands are needed in a non-agricultural society, so less children would be needed. Contraceptives and advanced sex education will be more available, leading to less unwanted births. Health care and technology will be more widely available, and this causes a lowered death rate.

d. To offer citizens incentives that would favor a reduction in the growth rate of a population, a government can reward couples who have one or few children with tax breaks. It can penalize couples with more than one child by not giving them tax breaks and even having penalty costs. One possible drawback is infanticide for couples who accidentally have an unwanted birth. Basic human rights and freedoms may also be violated.

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a) Country X has the highest rate of population growth because a significantly more amount of individuals are between ages of 0-14 than 45-85 which shows a high birth rate and thus a large rate of population growth. Country Y has the lowest rate of population growth because a significantly fewer amount of individuals are among age 0-14 and slower decreasing in amount as age goes up as seen more clearly in country X and Z. Thus country Y has the lowest rate of population growth.

b) Country Y seems to have a higher infant mortality

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rate than country X. This can be proved by observing the graphs. more individuals are alive in Country X within the ages of 0-14 than in Country Y. This thus proves that either country Y has a much lower birth rate than country X or that its infant mortality rate is a lot higher.

C) From a pre-industrial to an industrial society a country changes in both its birth and its death rate. Deaths become fewer in number as sanitary conditions improve and people are supplied with the materials they need to survive they did not have in the preindustrial era (or at least not in a large quantity). The birth rate would probably decrease because individuals would be more educated and would have better access to birth control. However, because of the better conditions created during the industrial society, the infant death rate would definitely decrease causing an increase in the rate of population growth in the area.

d) The gov. could offer financial aid to those families who have two or fewer children. These people would be rewarded for having small families. The gov. would have a census every 2-5 years in which the children for each couple would be counted. The fewer the children the more the financial aid and the more the less financial aid. The money for this aid could be obtained by punishing those with more than two children. They would be fined heavily and this money would be dispersed among those who qualify for financial aid. One drawback to this incentive would be, if

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everyone followed the law. Then everyone would be qualified for financial aid and there would be no where to obtain the money. Since no one was being punished, this could cause the ~~the~~ countries economy to eventually crumble.