1980년대(체외수정 시기 이전) 미국에서는 3612258건의 출생이 있었고 그 중 68339건이 쌍둥이, 1337건이 세쌍둥이 이상이었다. 1980년대에 쌍둥이 이상의 자녀를 가질 확률은?

UNIT 3 HOMEWORK

0,021239

Question 1:

In 1980 (before the era of in-vitro fertilization), there were 3,612,258 births in the United States (according to the U.S. Census Bureau), of which 68,339 births were to twins and 1,337 births were to triplets or more.

What was the probability of having multiples (twins or more) in 1980?

Enter as a percent but do not include the % sign. Round to the nearest tenth (e.g., x.x).

1.9

체외수정 이전 시기에 여성이 2번 연속으로 쌍둥이 이상을 출산할 확률은?

Question 2:

What was the probability of a woman giving birth to multiples twice in a row in the pre-IVF era? (Assume that the probabilities for 1980 are representative of the pre-IVF era.)

Enter as a percent but do not include the % sign. Round to 3 decimal places (e.g., .xxx).

0.037

체외수정 시기 이전에 일생동안 10번의 출산을 했을 때, 적어도 한번 쌍둥이 이상을 낳을 확률

Question 3:

If a woman had 10 births in her lifetime in the pre-IVF era, what was the chance that at least one of those births was to multiples? (Assume that the probabilities for 1980 are representative of the pre-IVF era.)

Enter as a percent but do not include the % sign. Round to the nearest tenth (e.g., xx.x).

17.7

어떤 암을 진단받고 5년 뒤에 생존해 있을 확률이 0.6이고 10년 뒤는 0.2일 때 5년동안 살아남은 사람이 10년 뒤에도 살아있을 확률은?

Question 4:

Suppose that the probability of surviving for 5-years after being diagnosed with a particular cancer is 0.60; and the probability of surviving for 10 years is 0.20. If a person survives 5 years, what is the probability that she will survive 10 years?

Enter as a percent but do not include the % sign. Round to the nearest whole number (e.g. xx).

12

여드름 환자들에게 항생제 내성을 진단하는 스크린을 개발했다. 양성 반응이면 특정 항생제에 반응이 덜하고 음성반응이면 더 반응이 있다는 것을 의미한다. 다음은 옥시테트라사이클린에 반응이 없는 환자 59명, 반응이 있는 환자 72명에게 테스트를 진행한 결과이다.

Question 5:

A company has developed a diagnostic test to screen for antibiotic resistance in acne patients. A positive test means that the patient will be less likely to respond to treatment with a specific antibiotic; a negative test means that they will be more likely to respond. To determine the clinical utility of the test, researchers applied the test to 59 patients who were known non-responders to oxytetracycline and 72 patients who were known responders. Here are the results:

table tr th td {border: 1px solid black; padding:5px; }

	Non-responders	Responders
Test positive	10	9
Test negative	49	63

What is the sensitivity of the test?

Enter as a percent but do not include the % sign. Round to the nearest whole number.

17

Question 6:

What is the specificity of the test?

Enter as a percent but do not include the % sign. Round to the nearest whole number.

88

Question 7:

The company believes that the prevalence of oxytetracycline resistance among acne patients in the general population is about 50%. Use this information to calculate the positive predictive value.

Enter as a percent but do not include the % sign. Round to the nearest whole number.

58

Question 8:

The company believes that the prevalence of oxytetracycline resistance among acne patients in the general population is about 50%. Use this information to calculate the negative predictive value.

51

Enter as a percent but do not include the % sign. Round to the nearest whole number.

Question 9:

In a blind taste test, three panelists tasted five pizza brands—Godfather's, Papa John's, Pizza Hut, zpizza and Ledo Pizza. All three panelists rated Godfather's pizza dead last. What's the probability that this outcome happened purely by chance?

In other words, assume that there is no taste difference between the five brands sampled and calculate the probability that all three panelists happened to randomly rate Godfather's as worst.

Enter as a percent but do not include the % sign. Round to the nearest tenth (e.g., .x).

0.8

Question 10:

In the early 1980s, hemophiliacs received reconstituted clotting factor concentrates derived from human blood. The concentrates were pooled from the blood of about 1000 donors per lot. If the

prevalence of HIV in donor blood in the early 1980s was 1 in 3,000, what was the probability that a hemophiliac would contract HIV from a single infusion of clotting factors?
Enter as a percent but do not include the % sign. Round to the nearest tenth (e.g., xx.x).

33.3