REVIEW QUESTIONS FOR SCREENING

Questions 1, 2, and 3 are based on the information given below:

A physical examination was used to screen for breast cancer in 2,500 women with biopsy-proven adenocarcinoma of the breast and in 5,000 age- and race-matched control women. The results of the physical examination were positive (i.e., a mass was palpated) in 1,800 cases and in 800 control women, all of whom showed no evidence of cancer at biopsy.

1. The sensitivity of the physical examination was: _____

2. The specificity of the physical examination was: _____

3. The positive predictive value of the physical examination was: _____

Question 4 is based on the following information:

A screening test is used in the same way in two similar populations, but the proportion of false positive results among those who test positive in population A is lower than that among those who test positive in population B.

4. What is the likely explanation for this finding?

a. It is impossible to determine what caused the difference

b. The specificity of the test is lower in population A

c. The prevalence of disease is lower in population A

d. The prevalence of disease is higher in population A

e. The specificity of the test is higher in population A

Question 5 is based on the following information:

A physical examination and an audiometric test were given to 500 persons with suspected hearing problems, of whom 300 were actually found to have them. The results of the examinations were as follows:

Physical Examination

	HEARING PROBLEMS	
Result	**Present**	**Absent**
Positive	240	40
Negative	60	160

Audiometric Test

	HEARING PROBLEMS	
Result	**Present**	**Absent**
Positive	**270**	**60**
Negative	**30**	**140**

5. Compared with the physical examination, the audiometric test is:

a. Equally sensitive and specific

b. Less sensitive and less specific

c. Less sensitive and more specific

d. More sensitive and less specific

e. More sensitive and more specific

Question 6 is based on the following information:

Two pediatricians want to investigate a new laboratory test that identifies streptococcal infections. Dr. Kidd uses the standard culture test, which has a sensitivity of 90% and a specificity of 96%. Dr. Childs uses the new test, which is 96% sensitive and 96% specific.

6. If 200 patients undergo culture with both tests, which of the following is correct?

a. Dr. Kidd will correctly identify more people with streptococcal infection than Dr. Childs

b. Dr. Kidd will correctly identify fewer people with streptococcal infection than Dr. Childs

c. Dr. Kidd will correctly identify more people without streptococcal infection than Dr. Childs

d. The prevalence of streptococcal infection is needed to determine which pediatrician will correctly identify the larger number of people with the disease

Questions 7 and 8 are based on the following information:
A colon cancer screening study is being conducted in Nottingham, England. Individuals 50 to 75 years old will be screened with the Hemoccult test. In this test, a stool sample is tested for the presence of blood.

7. The Hemoccult test has a sensitivity of 70% and a specificity of 75%. If Nottingham has a prevalence of 12/1,000 for colon cancer, what is the positive predictive value of the test?

8. If the Hemoccult test result is negative, no further testing is done. If the Hemoccult test result is positive, the individual will have a second stool sample tested with the Hemoccult II test. If this second sample also tests positive for blood, the individual will be referred for more extensive evaluation. What is the effect on net sensitivity and net specificity of this method of screening?
a. Net sensitivity and net specificity are both increased
b. Net sensitivity is decreased and net specificity is increased
c. Net sensitivity remains the same and net specificity is increased
d. Net sensitivity is increased and net specificity is decreased
e. The effect on net sensitivity and net specificity cannot be determined from the data

Questions 9 through 12 are based on the information given below:
Two physicians were asked to classify 100 chest X-rays as abnormal or normal independently. The comparison of their classification is shown in the following table:

Classification of Chest X-Rays by Physician 1 Compared with Physician 2

	Physician 2		
Physician 1	***Abnormal***	***Normal***	**Total**
Abnormal	40	20	60
Normal	10	30	40
Total	50	50	100

9. The simple percent agreement between the two physicians out of the total is: _____

10. The percent agreement between the two physicians, excluding the X-rays that both physicians classified as normal, is: _____

11. The value of kappa is: _____

12. This value of kappa represents what level of agreement?
a. Excellent
b. Intermediate to good
c. Poor