GEOMETRY · CLASSWORK

Understanding False Positive and False Negative Results

SCORE / 25

01 Part A · Practice

A false positive is a positive test for someone without the condition; a false negative is a negative test for someone with it.

EXAMPLE

100 have a condition (95 test +), 900 do not (45 test +). Find P(has it | +).

1. Positive tests: 95 + 45 = 140.
2. True positives: 95.
3. $P(\text{has it} \mid +) = \frac{95}{140} \approx 0.68$

1 ●○○ The table shows test results for 50,000 people. How many are true negatives? Explain.

	Test +	Test −	Total
Has it	2000	500	2500
Does not	2375	45125	47500
Total	4375	45625	50000

2 ●○○ Use the table. Find the false negative rate, $P(\text{test} - \mid \text{has it})$.

	Test +	Test −	Total
Has it	850	150	1000
Does not	900	8100	9000
Total	1750	8250	10000

3 ●○○ Use the table. A person tests positive. Find the probability the person has the condition, to the nearest hundredth.

	Test +	Test −	Total
Has it	360	40	400
Does not	1440	8160	9600
Total	1800	8200	10000

4 ●○○ Use the table. Find the false positive rate, $P(\text{test} + \mid \text{does not have it})$.

	Test +	Test −	Total
Has it	90	10	100
Does not	135	765	900
Total	225	775	1000

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PREVIEW PREVIEW PREVIEW

Preview - the full worksheet and its answer key are at primeworksheet.com