

Solutions

2.1 Restrict to 18 cyclists; 7 swim.

2.2 180 true positives plus 80 false positives.

2.3 Divide numerator and denominator by 20 to get $9/13$.

3.1 False. In a group of 100, let $|A|=20$, $|B|=50$ and $|A \cap B|=10$. Then $P(A|B)=10/50=1/5$, but $P(B|A)=10/20=1/2$.

Local review guidance: show the chosen method; give the checked result; explain the condition or failed shortcut. This is authored classroom guidance.