

Quiz 8-31 PRACTICE

[1] Given the data set $\{a-1, a, a+1, a+3\}$.

[a] Find μ , the mean of the data set in the form $a+m$, where m is a rational number.

[b] Find σ^2 , the variance of the data set in the form $\frac{p}{q}$, where p and q are integers.

[c] Write down the mean of the data set $\{a+4, a+5, a+6, a+8\}$ in terms of a .

[d] Write down the variance of the data set $\{4a-4, 4a, 4a+4, 4a+12\}$

[2] There are 100 IB students at Omri High School. 40 of them take French. 50 of them take Spanish. An IB student is chosen at random.

F = the event that a student taking French is chosen.

S = the event that a student taking Spanish is chosen.

Given that $P(F' \cap S') = 0.2$, find the following probabilities.

[a] $P(F \cap S)$

[b] $P(F \cap S')$

[c] $P(F' \cup S')$

[3] Given $P(A) = 0.4$, $P(A \cap B) = 0.2$, and $P(A \cup B) = 0.8$. Find the following probabilities.

[a] $P(A')$

[b] $P(B)$

[c] $P(A' \cap B)$

[4] Given $P(M \cap N') = 0.6$, $P(M' \cap N) = 0.1$, and $P(M' \cap N') = 0.2$. Find the following probabilities.

[a] $P(M)$

[b] $P(N)$

[c] $P(M \cap N)$

[5] Two dice are rolled. Event A is that both dice show an even number. Event B is that the dice add up to 8 or more. Find the following probabilities.

[a] $P(A)$

[b] $P(B)$

[c] $P(A \cap B)$

[d] $P(A \cup B)$