



Probability Union, Intersection, Complement - Word Problem Percents to Formula

1 Let A be the yoga group and B be the spin group. Which expression gives the number of gym members who are in neither group?

In a survey of gym members, 32% take yoga, 76% take spin, and 20% take both.

A $n(A) + n(B) - n(A \cap B)$

B $N - n(A) - n(B) + n(A \cap B)$

C $N - n(A) - n(B)$

D $N - n(A) - n(B) - n(A \cap B)$

2 Let A be the bike group and B be the skateboard group. Which expression gives the number of students who are in neither group?

In a survey of students, 20% ride both, 70% are in the bike group but not the skateboard group, and 5% are in the skateboard group but not the bike group.

A $n(A) + n(B) - n(A \cap B)$

B $N - n(A) - n(B)$

C $N - n(A) - n(B) + n(A \cap B)$

D $N - n(A) - n(B) - n(A \cap B)$

3 Let A be the electric group and B be the under 5 yrs group. Which expression gives the number of vehicles who are in at least one of the two groups?

In a survey of vehicles, 58% are electric, 22% are both, and 18% are in neither group.

A $n(A) + n(B) - n(A \cap B)$

B $n(A) \cdot n(B)$

C $n(A) + n(B)$

D $n(A) + n(B) + n(A \cap B)$

4 Let A be the art group and B be the comp sci group. Which expression gives the number of students who are in at least one of the two groups?

In a survey of students, 10% take both, 15% are in the art group but not the comp sci group, and 70% are in the comp sci group but not the art group.

A $n(A) \cdot n(B)$

B $n(A) + n(B) + n(A \cap B)$

C $n(A) + n(B)$

D $n(A) + n(B) - n(A \cap B)$

5 Let A be the SUV group and B be the red group. Which expression gives the number of vehicles who are in at least one of the two groups?

In a survey of vehicles, 42% are SUVs, 25% are both, and 28% are in neither group.

A $n(A) + n(B) + n(A \cap B)$

B $n(A) \cdot n(B)$

C $n(A) + n(B)$

D $n(A) + n(B) - n(A \cap B)$

6 Let A be the art group and B be the comp sci group. Which expression gives the number of students who are in neither group?

In a survey of students, 90% take art, 15% take computer science, and 10% take both.

A $N - n(A) - n(B) - n(A \cap B)$

B $N - n(A) - n(B)$

C $N - n(A) - n(B) + n(A \cap B)$

D $n(A) + n(B) - n(A \cap B)$

7 Let A be the sales group and B be the marketing group. Which expression gives the number of employees who are in at least one of the two groups?

In a survey of employees, 36% work in sales, 12% work in both, and 12% are in neither group.

A $n(A) + n(B) - n(A \cap B)$

B $n(A) \cdot n(B)$

C $n(A) + n(B) + n(A \cap B)$

D $n(A) + n(B)$

8 Let A be the bought group and B be the coupon group. Which expression gives the number of customers who are in neither group?

In a survey of customers, 17% did both, 62% are in the bought group but not the coupon group, and 11% are in the coupon group but not the bought group.

A $N - n(A) - n(B)$

B $n(A) + n(B) - n(A \cap B)$

C $N - n(A) - n(B) - n(A \cap B)$

D $N - n(A) - n(B) + n(A \cap B)$