

MATH 017 Sections 006 and 007
Spring 2007
Quiz 3

1. If $n(A) = 27$, $n(B) = 35$, and $n(A \cap B) = 21$; what is $n(A \cup B)$?
 - a. 38
 - b. 41
 - c. 62
 - d. 35

2. Suppose a set A has 5 elements. How many subsets of A are there that contain at least one element of, but not all five elements of A ?
 - a. 32
 - b. 31
 - c. 30
 - d. 25

3. The table below shows the (hypothetical) results of a campus poll taken in which people of different majors are asked where they intend to reside during the next academic year.

	Visual Arts (A)	Natural Sciences (B)	Social Sciences (C)	Performing Arts (E)	Liberal Arts (F)	
Dorms (D)	237	112	86	140	16	591
Apartments (P)	241	64	32	175	5	517
Houses (H)	25	23	12	15	17	92
Totals	503	199	130	330	38	1200

Find the number of people in the set $D \cap (E \cup H)$.

- a. 140
 - b. 606
 - c. 155
 - d. 0
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4. A card is drawn from a well-shuffled standard deck of 52 playing cards. What is the probability of obtaining a card that is a queen and a heart?
 - a. $\frac{2}{13}$
 - b. $\frac{1}{52}$
 - c. $\frac{17}{52}$
 - d. $\frac{4}{13}$

5. Among 180 households surveyed, 59 have a rifle, 45 have a pickup truck, 31 have a guard dog, 9 have a rifle and a pickup truck, 8 have a pickup truck and a guard dog, and 5 have all three. What is the probability that a household will have a pickup truck and a rifle but not a guard dog?

- a. $\frac{17}{45}$
- b. $\frac{1}{45}$
- c. $\frac{24}{45}$
- d. $\frac{19}{45}$