

EOC Review

Unit 6 Summary

Deck of Cards

- How many total? 52
- How many in each suit? 13
- How many suits? 4
- How many face cards? 12

Probability

- Measures $\frac{\text{\# of successes}}{\text{\# of possibilities}}$ and is always between $\frac{0}{100\%}$ and $\frac{1}{100\%}$.
- How many combinations with two fair dice?

→ Read and re-read the question visualizing the situation.

i.e. You have a project where you can choose from 5 colored posters, 4 pictures, and 3 fonts. How many different types?

$$5 \cdot 4 \cdot 3 = 60 \text{ possible projects}$$

i.e. You roll a 10-sided die producing the results: 6, 7, 9, 8, 1, 5, 1, 8, 3
Let Event A = even #s and Event B = #s less than 7
A = 6, 8

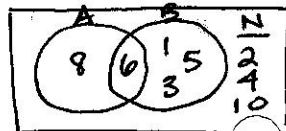
(a) Find $A \cup B = \frac{5 \text{ \# in } A \cup B}{10 \text{ sides total}}$ or $\frac{1}{2}$ (b) Find $A \cap B = \frac{1 \text{ \# in } A \cap B}{10 \text{ sides total}}$ B = 6, 1, 5, 3

→ Addition Rule: $P(A \cup B) = P(A) + P(B) - P(A \cap B)$ *look for "or"*

→ Complement Rule: $P(A') = 1 - P(A)$ *look for "not"*

→ Conditional Probability: $P(A|B) = \frac{P(A \cap B)}{P(B)}$ *look for "given"*

→ Independence: $P(A \cap B) = P(A) \cdot P(B)$ *look for "Independence"*

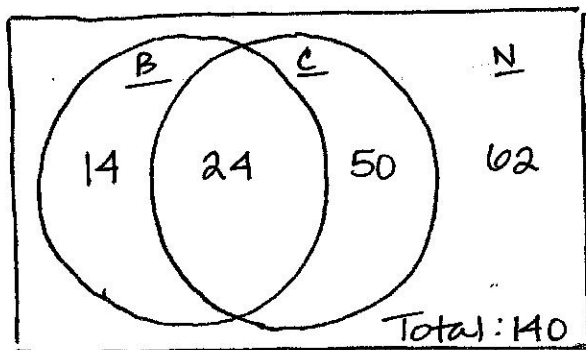


EX: You have 25 animals where 15 are male. Of the 15, there are 6 dogs. A friend sees 13 dogs and 12 cats in your yard.
How many female dogs are there? 13 dogs total

25 animals total $\begin{cases} \rightarrow 15 \text{ males} \rightarrow 6 \text{ male dogs} \\ \rightarrow 10 \text{ females} \end{cases} \Rightarrow \underline{7 \text{ female dogs}}$

* If you have a two-way table, then find the totals.

Venn Diagram



Always fill in the overlaps first!
140 students total. 38 are in band, 74 are in chorus, and 24 are in both.

a) $P(B) = \frac{38}{140}$

b) $P(C) = \frac{74}{140}$

c) $P(B \cap C) = \frac{14}{140}$
NOT in B but NOT in C

d) $P(\neg B \cap \neg C) = \frac{62}{140}$
NOT in B and also NOT in C
 \Rightarrow "Neither"

e) $P(B \cup C) = \frac{88}{140}$