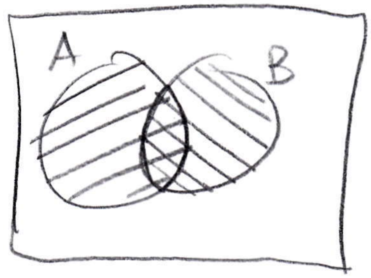
84) $P(A) = 0.84$ $P(B) = 0.46$ $P(A \text{ and } B) = 0.38$

$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$

$= 0.84 + 0.46 - 0.38$

$= 0.92$



85) $P(A) = \frac{1}{3}$ $P(A \text{ or } B) = \frac{1}{2}$ $P(A \text{ and } B) = \frac{1}{10}$

If two events are mutually exclusive, $P(A \text{ and } B) = 0$

So A, B are NOT mutually exclusive.

P(B)?

$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$

$P(A \text{ or } B) - P(A) + P(A \text{ and } B) = P(B)$

$\frac{1}{2} - \frac{1}{3} + \frac{1}{10} \approx 0.267$

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86) $P(A) = \frac{1}{4}$ $P(B) = \frac{1}{3}$ $P(A \text{ or } B) = \frac{1}{2}$

$P(A \text{ or } B) \stackrel{?}{=} P(A) + P(B)$ if mutually exclusive.

$\frac{1}{2} \stackrel{?}{=} \frac{1}{4} + \frac{1}{3}$

$\frac{1}{2} \neq \frac{7}{12}$ NOT mutually exclusive

Find $P(A \text{ and } B)$

$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$

$P(A \text{ and } B) = P(A) + P(B) - P(A \text{ or } B)$

$= \frac{1}{4} + \frac{1}{3} - \frac{1}{2}$

$= \frac{7}{12} - \frac{1}{2}$

$= \frac{1}{12}$

% in an ocean

$0.008 + 0.037 = 0.045$

4.5%

% in lake or harbor

$0.020 + 0.002 + 0.161 = 0.183$

18.3%

% NOT in lake, ocean, river, canal

$0.233 + 0.146 + 0.161 + 0.027 = 0.567$

56.7%

51.5% of US adults female

10.4% divorced

6.0% divorced female

F = event female

D = event divorced

$P(F) = 0.515$

$P(D) = 0.104$

$P(F \text{ and } D) = 0.06$

$$P(F \text{ or } D) = P(F) + P(D) - P(F \text{ and } D)$$
$$= 0.515 + 0.104 - 0.060$$
$$= 0.559$$

55.9%

$$P(\text{not } D) = 1 - P(D)$$
$$= 1 - 0.104 = 0.896$$