Unit 7 Practice #2 #28

1. A sociologist collected data on the types of pets in 100 randomly selected households, and summarized the results in a table.

		Owns a cat		
		Yes	**No**	**Total**
Owns a dog	**Yes**	15	24	39
	No	18	43	61
	Total	33	67	100

A) P(owns a cat)
B) P(owns a dog I does not own a cat)
C) P(does not own a cat I does not own a dog)
D) P(owns a cat I owns a dog)
E) P(does not own a dog I owns a cat)
F) P(does not own a dog)

2. A standard deck of cards has 52 cards.
A) Find the probability of picking a heart or a diamond.
B) Find the probability of picking a heart, putting it back in the deck and then picking a diamond.
C) Find the probability of picking a heart or a red card.
D) Find the probability of picking heart, given that the card is a face card.
E) Find the probability of picking a heart, leaving it out of the deck and then picking a diamond.

3. The numbers 1-10 are written on cards and placed in a bag.
A) Find the probability of picking an even number given that the number is greater than 4.
B) Find the probability of picking an even number or a number greater than 4.
C) Find the probability of picking an even number, leaving it out of the deck and then picking an odd number.
D) Find the probability of picking a multiple of 3 or a 5.
E) Find the probability of picking a multiple of 3, putting it back in the deck and then picking a 5.

4. Consider that sample space: {a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p}

A = {vowels}
B = {a, b, c, d, e}
C = {a, c, e, k, l}
D = {l, n, p}

A) $A \cup D$
B) ~B
C) ~A∩B
D) ~ $(B \cup C)$
E) B ∩D

Key

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#28

1. A sociologist collected data on the types of pets in 100 randomly selected households, and summarized the results in a table.

		Owns a cat: Yes	Owns a cat: No	Total
Owns a dog	Yes	15	24	39
	No	18	43	61
	Total	33	67	100

A) P(owns a cat) $\frac{33}{100}$

B) P(owns a dog | does not own a cat) $\frac{24}{67}$

C) P(does not own a cat | does not own a dog) $\frac{43}{61}$

D) P(owns a cat | owns a dog) $\frac{15}{39}$

E) P(does not own a dog | owns a cat) $\frac{18}{33}$

F) P(does not own a dog) $\frac{61}{100}$

2. A standard deck of cards has 52 cards.

A) Find the probability of picking a heart or a diamond. $\frac{13}{52} + \frac{13}{52} = \frac{26}{52}$

B) Find the probability of picking a heart, putting it back in the deck and then picking a diamond. $13/52 \cdot 13/52 = 169/2704$

C) Find the probability of picking a heart or a red card. $\frac{13}{52} + \frac{26}{52} - \frac{13}{52} = \frac{26}{52}$

D) Find the probability of picking heart, given that the card is a face card. $3/12$

E) Find the probability of picking a heart, leaving it out of the deck and then picking a diamond. $\frac{13}{52} \cdot 13/51 = 169/2652$

3. The numbers 1-10 are written on cards and placed in a bag. 1 2 3 4 5 6 7 8 9 10

A) Find the probability of picking an even number given that the number is greater than 4. $3/6$

B) Find the probability of picking an even number or a number greater than 4. $\frac{5}{10} + \frac{6}{10} - \frac{3}{10} = \frac{8}{10}$

C) Find the probability of picking an even number, leaving it out of the deck and then picking an odd number. $\frac{5}{10} \cdot \frac{5}{9} = 25/90$

D) Find the probability of picking a multiple of 3 or a 5. $\frac{3}{10} + \frac{1}{10} = \frac{4}{10}$

E) Find the probability of picking a multiple of 3, putting it back in the deck and then picking a 5. $\frac{3}{10} \cdot \frac{1}{10} = \frac{3}{100}$

4. Consider that sample space: {a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p}

A = {vowels} = {a, e, i, o}

B = {a, b, c, d, e}

C = {a, c, e, k, l}

D = {l, n, p}

A) $A \cup D$ {a, e, i, l, n, o, p}

B) ~B {f, g, h, i, j, k, l, m, n, o, p}

C) ~A∩B {b, c, d, f, g, h, j, k, l, m, n, p} ∩ {a, b, c, d, e} = {b, c, d}

D) ~$(B \cup C)$ ~{a, b, c, d, e, k, l} = {f, g, h, i, j, m, n, o, p}

E) B ∩ D { }

↑ empty set