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Details Questions

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Set Operations 1 3 pts

Let S be the universal set, where:
S = { 1, 2, 3, 4, 5, ... , 15, 16, 17, 18, 19, 20 } and A and B be subsets of S , where:

Set A = {6, 7, 8, 9, 10, 11, 12, 13, 14, 15} Set B = {odd numbers from 1 to 19 }
LIST the elements in the set ($\boldsymbol{A \cap B}$)

swer

- {7, 9, 11, 13, 15}
- {1, 2, 3, 4, 5, ..., 15, 16, 17, 18, 19, 20}
- { 1, 3, 5, 7, 9, 11, 13, 15, 17, 19 }

{ 6, 8, 10, 12, 14}

Set Operations 2 — 3 pts

Let S be the universal set, where:
S = { 1, 2, 3, 4, 5, ... , 15, 16, 17, 18, 19, 20 } and A and B be subsets of S , where:

Set A = {6, 7, 8, 9, 10, 11, 12, 13, 14, 15} Set B = {odd numbers from 1 to 19 }
LIST the elements in the set A^c

swer

- {1, 2, 3, 4, 5, 16, 17, 18, 19, 20}
- {odd numbers from 1 to 19}
- {even numbers from 2 to 20}
- {2, 4, 16, 18, 20}

Set Operations 3 — 3 pts

Let S be the universal set, where:
S = { 1, 2, 3, 4, 5, ... , 15, 16, 17, 18, 19, 20 } and A and B be subsets of S , where:

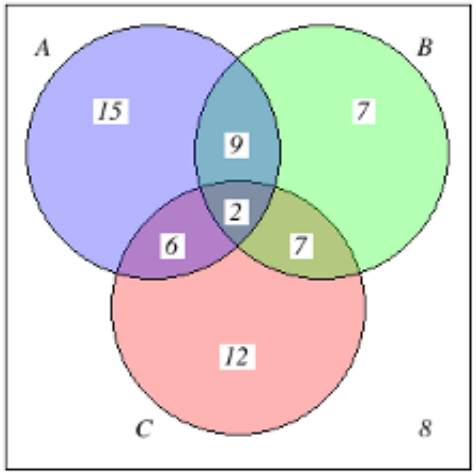
Set A = {6, 7, 8, 9, 10, 11, 12, 13, 14, 15} Set B = {odd numbers from 1 to 19 }
LIST the elements in the set $A^c \cap B$

swer

- {1, 3, 5, 17, 19}
- {6, 8, 10, 12, 14}
- {1, 2, 3, 4, 5, 6, 8, 10, 12, 14, 16, 17, 18, 19, 20}
- nothing, empty set, $\varnothing$

Venn diagram 1 — 3 pts

The Venn diagram here shows the **cardinality** of each set. Use this to find the cardinality of each given set.



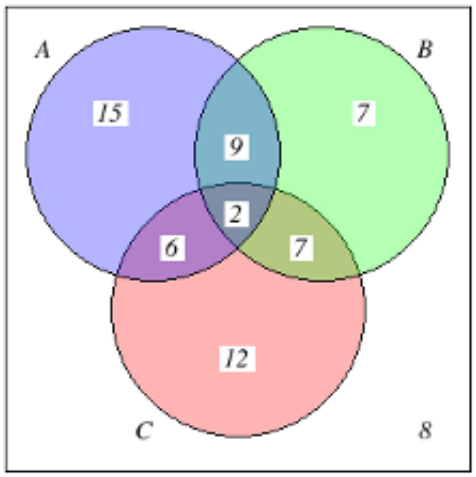
What is $\boldsymbol{n}(\boldsymbol{A} \cap \boldsymbol{B})$?

swer

- 11
- 24
- 9
- 25

Venn diagram 2 — 3 pts

The Venn diagram here shows the **cardinality** of each set. Use this to find the cardinality of each given set.



What is $n\left((A \cup B) \cap C^c\right)$

swer

- 31
- 12
- 9
- 2

Survey 1 — 3 pts

. ***_____ people were surveyed*** asking whether they watch movies at home from Netflix, Redbox, or a video store. Use the results to determine **how many people were surveyed**.

17 only use Netflix

12 only use Redbox

15 only use a video store

20 use **only** a video store and Redbox

31 use **only** Netflix and Redbox

27 use ***both*** a video store and Netflix

19 use all three

13 use none of these

swer

- 135
- 154
- 141
- 150

Probability 1 — 3 pts

A group of people were asked if they had used an illegal substance last year. 152 responded "yes", and 361 responded "no".

Find the probability that if a person is chosen at random, they have used an illegal substance in the last year.

swer

- 0.296

- 0.421
- 1 out of 3
- 0.704

Probability 2

3 pts

Giving a test to a group of students, the grades and class section are summarized below

	A	B	C	Total
Morning	12	9	18	39
Afternoon	5	15	12	32
Total	17	24	30	71

If one student was chosen at random, find the probability that the student was in the **afternoon class.**

swer

- 0.45
- 0.82
- 0.55
- 0.18

Probability 3

3 pts

Giving a test to a group of students, the grades and class section are summarized below

	A	B	C	Total
Morning	12	9	18	39
Afternoon	5	15	12	32
Total	17	24	30	71

If one student is chosen at random, find the probability that the student was in the morning class GIVEN THAT they got a “C”:

swer

- 0.60
- 0.254
- 0.462
- 0.40

Probability 4

3 pts

Ilya buys a bag of cookies that contains 8 chocolate chip cookies, 5 peanut butter cookies, 2 sugar cookies and 7 oatmeal cookies.

What is the probability that Ilya reaches in the bag to get 2 cookies and randomly selects a chocolate chip cookie and a peanut butter cookie from the bag?

Round your answer to 5 decimal places.

swer

- 0.08658
- 0.59091
- 0.08264
- 0.18182

Probability 5 3 pts

This table shows the presence of the flu in the population. It also shows how accurate a certain flu test is.

	Tests positive	Tests negative	Row Totals
Has disease	4.8	3.2	8
Does not have disease	1.84	90.16	92
Column Totals			100

What percent of the population has the flu? (according to the table)

swer

- 8%
- 4.8%
- 3.2%
- 1.84%

Probability 6 — 3 pts

This table shows how accurate/reliable a certain test for the flu is. Two numbers are missing and will need to be filled in on paper before answering the question.

	Tests positive	Tests negative	Row Totals
Has disease	3.2	4.8	8
Does not have disease	1.84	90.16	92
Column Totals			100

What is the probability that a person has the disease ***given that*** they test negative? Round your answer to 3 decimal places.

swer

- 0.051
- 0.600
- 0.048
- 0.080

Expected Value 1 — 3 pts

A company estimates that ***7% of their products will fail*** after the original warranty period but within 2 years of the purchase, with a replacement cost of $550.

If they offer a 2-year extended warranty for $39, ***what is the company's expected value of each warranty sold***? Let "x" be the profit or loss to the company for each extended warranty sold.

swer

- 0.50
- 2.73
- -511
- 39

Expected Value 2 — 3 pts

Surab offers the following game. A standard deck of cards is placed face down on the table. The player pays $1.00 to see the top card. If it is a **face card (Jack/Queen/King)** the player gets $4.00 in return. If not, the player receives nothing. What can Surab expect to make each time someone plays (over time)? (If Surab loses money, the answer will be negative.)

swer

- 0.0768
- -0.154
- breaks even
- 1.00

Average Rate of Change 1

3 pts

The total cost *y=C(x)*, in dollars, to produce *x* items is given by the function shown here.

$$y = 300 + 25x - 0.03x^2$$

x	$300 + 25x - 0.03x^2$
0	300
50	1475
100	2500
150	3375
25	906.25
125	2956.25
75	2006.25

What is the average rate of change in cost from x = 25 to x = 100?

swer

- 21.25
- 1593.75
- 15.9375
- -1175

Estimate Slope 1

3 pts

Find the slope of the line through the points (4,16) and (4.01, 16.0801) on the graph of $y = x^2$?

Use that answer to ***estimate*** the ***slope of the tangent line*** at (4, 16). Give your best guess of what the slope ***actually is*** at the point (4, 16).

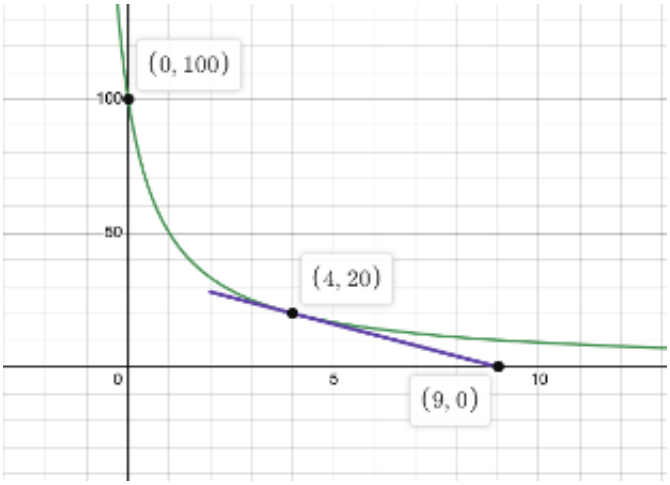
swer

- 8
- 0.125
- 48
- 32

Estimate Slope 2

3 pts

The graph of a function is given. It represents how much is recalled in memory after x days. The tangent line at x = 4 is shown and points are labeled. **What is the rate of change of y with respect to x at day 4?**



swer

- -4
- 4
- 11.1
- -11.1

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