#1 Prob and Stats – Hustle
MAΘ National Convention 2022

There are 420 students in the senior class. 250 are taking AP Calculus and 180 are taking AP Statistics. There are 15 students taking neither course. How many students are taking both?

Answer : _____

Round 1 2 3 4 5

#1 Prob and Stats – Hustle
MAΘ National Convention 2022

There are 420 students in the senior class. 250 are taking AP Calculus and 180 are taking AP Statistics. There are 15 students taking neither course. How many students are taking both?

Answer : _____

Round 1 2 3 4 5

#1 Prob and Stats – Hustle
MAΘ National Convention 2022

There are 420 students in the senior class. 250 are taking AP Calculus and 180 are taking AP Statistics. There are 15 students taking neither course. How many students are taking both?

Answer : _____

Round 1 2 3 4 5

#1 Prob and Stats – Hustle
MAΘ National Convention 2022

There are 420 students in the senior class. 250 are taking AP Calculus and 180 are taking AP Statistics. There are 15 students taking neither course. How many students are taking both?

Answer : _____

Round 1 2 3 4 5

#2 Prob and Stats – Hustle
MAΘ National Convention 2022

Compute the standard deviation of the following sample of data:

4, 6, 6, 8, 10, 10, 10, 12, 14, 20

Leave your answer in $\frac{a\sqrt{b}}{c}$ form, where a, b, c are integers, not necessarily distinct.

Answer : _____

Round 1 2 3 4 5

#2 Prob and Stats – Hustle
MAΘ National Convention 2022

Compute the standard deviation of the following sample of data:

4, 6, 6, 8, 10, 10, 10, 12, 14, 20

Leave your answer in $\frac{a\sqrt{b}}{c}$ form, where a, b, c are integers, not necessarily distinct.

Answer : _____

Round 1 2 3 4 5

#2 Prob and Stats – Hustle
MAΘ National Convention 2022

Compute the standard deviation of the following sample of data:

4, 6, 6, 8, 10, 10, 10, 12, 14, 20

Leave your answer in $\frac{a\sqrt{b}}{c}$ form, where a, b, c are integers, not necessarily distinct.

Answer : _____

Round 1 2 3 4 5

#2 Prob and Stats – Hustle
MAΘ National Convention 2022

Compute the standard deviation of the following sample of data:

4, 6, 6, 8, 10, 10, 10, 12, 14, 20

Leave your answer in $\frac{a\sqrt{b}}{c}$ form, where a, b, c are integers, not necessarily distinct.

Answer : _____

Round 1 2 3 4 5

#3 Prob and Stats – Hustle
MAΘ National Convention 2022

36 and 24 are two observations from a distribution and their z-scores are 2 and 0.5 respectively. If A = the mean of the distribution and B = the standard deviation of the distribution, what is the value of A + B?

Answer : _____

Round 1 2 3 4 5

#3 Prob and Stats – Hustle
MAΘ National Convention 2022

36 and 24 are two observations from a distribution and their z-scores are 2 and 0.5 respectively. If A = the mean of the distribution and B = the standard deviation of the distribution, what is the value of A + B?

Answer : _____

Round 1 2 3 4 5

#3 Prob and Stats – Hustle
MAΘ National Convention 2022

36 and 24 are two observations from a distribution and their z-scores are 2 and 0.5 respectively. If A = the mean of the distribution and B = the standard deviation of the distribution, what is the value of A + B?

Answer : _____

Round 1 2 3 4 5

#3 Prob and Stats – Hustle
MAΘ National Convention 2022

36 and 24 are two observations from a distribution and their z-scores are 2 and 0.5 respectively. If A = the mean of the distribution and B = the standard deviation of the distribution, what is the value of A + B?

Answer : _____

Round 1 2 3 4 5

#4 Prob and Stats – Hustle
MAΘ National Convention 2022

A sampling design is implemented so that each classroom at Vestavia Hills HS is labeled with a distinct number from 1-75, inclusive. The classrooms labeled 3, 19, and 46 are randomly selected and every student in each of the selected rooms is included as part of the overall sample. Assuming all classrooms in the school are similar to each other and that each classroom is representative of the school as a whole, then this is an example of a _____ random sample. Fill in the missing word in the blank.

Answer : _____

Round 1 2 3 4 5

#4 Prob and Stats – Hustle
MAΘ National Convention 2022

A sampling design is implemented so that each classroom at Vestavia Hills HS is labeled with a distinct number from 1-75, inclusive. The classrooms labeled 3, 19, and 46 are randomly selected and every student in each of the selected rooms is included as part of the overall sample. Assuming all classrooms in the school are similar to each other and that each classroom is representative of the school as a whole, then this is an example of a _____ random sample. Fill in the missing word in the blank.

Answer : _____

Round 1 2 3 4 5

#4 Prob and Stats – Hustle
MAΘ National Convention 2022

A sampling design is implemented so that each classroom at Vestavia Hills HS is labeled with a distinct number from 1-75, inclusive. The classrooms labeled 3, 19, and 46 are randomly selected and every student in each of the selected rooms is included as part of the overall sample. Assuming all classrooms in the school are similar to each other and that each classroom is representative of the school as a whole, then this is an example of a _____ random sample. Fill in the missing word in the blank.

Answer : _____

Round 1 2 3 4 5

#4 Prob and Stats – Hustle
MAΘ National Convention 2022

A sampling design is implemented so that each classroom at Vestavia Hills HS is labeled with a distinct number from 1-75, inclusive. The classrooms labeled 3, 19, and 46 are randomly selected and every student in each of the selected rooms is included as part of the overall sample. Assuming all classrooms in the school are similar to each other and that each classroom is representative of the school as a whole, then this is an example of a _____ random sample. Fill in the missing word in the blank.

Answer : _____

Round 1 2 3 4 5

#5 Prob and Stats – Hustle
MAΘ National Convention 2022

For each statistic below, determine whether it is a resistant measure. For those determined to be resistant, find the sum of the values to their left.

1 Mean
-8 Median
11 Standard Deviation of a Sample
-4 Range
6 IQR
-3 Variance of a Sample
2 Correlation Coefficient
12 Coefficient of Determination

Answer : _____

Round 1 2 3 4 5

#5 Prob and Stats – Hustle
MAΘ National Convention 2022

For each statistic below, determine whether it is a resistant measure. For those determined to be resistant, find the sum of the values to their left.

1 Mean
-8 Median
11 Standard Deviation of a Sample
-4 Range
6 IQR
-3 Variance of a Sample
2 Correlation Coefficient
12 Coefficient of Determination

Answer : _____

Round 1 2 3 4 5

#5 Prob and Stats – Hustle
MAΘ National Convention 2022

For each statistic below, determine whether it is a resistant measure. For those determined to be resistant, find the sum of the values to their left.

1 Mean
-8 Median
11 Standard Deviation of a Sample
-4 Range
6 IQR
-3 Variance of a Sample
2 Correlation Coefficient
12 Coefficient of Determination

Answer : _____

Round 1 2 3 4 5

#5 Prob and Stats – Hustle
MAΘ National Convention 2022

For each statistic below, determine whether it is a resistant measure. For those determined to be resistant, find the sum of the values to their left.

1 Mean
-8 Median
11 Standard Deviation of a Sample
-4 Range
6 IQR
-3 Variance of a Sample
2 Correlation Coefficient
12 Coefficient of Determination

Answer : _____

Round 1 2 3 4 5

#6 Prob and Stats – Hustle
MAΘ National Convention 2022

Given the following discrete distribution,

X	2	6	10	14	20
P(X)	0.1	0.2	0.35	0.2	0.15

Find the mean of the distribution.

Answer : _____

Round 1 2 3 4 5

#6 Prob and Stats – Hustle
MAΘ National Convention 2022

Given the following discrete distribution,

X	2	6	10	14	20
P(X)	0.1	0.2	0.35	0.2	0.15

Find the mean of the distribution.

Answer : _____

Round 1 2 3 4 5

#6 Prob and Stats – Hustle
MAΘ National Convention 2022

Given the following discrete distribution,

X	2	6	10	14	20
P(X)	0.1	0.2	0.35	0.2	0.15

Find the mean of the distribution.

Answer : _____

Round 1 2 3 4 5

#6 Prob and Stats – Hustle
MAΘ National Convention 2022

Given the following discrete distribution,

X	2	6	10	14	20
P(X)	0.1	0.2	0.35	0.2	0.15

Find the mean of the distribution.

Answer : _____

Round 1 2 3 4 5

#7 Prob and Stats – Hustle
MAΘ National Convention 2022

What are the number of distinct arrangements of the letters in the word **"regression"**?

Answer : _____

Round 1 2 3 4 5

#7 Prob and Stats – Hustle
MAΘ National Convention 2022

What are the number of distinct arrangements of the letters in the word **"regression"**?

Answer : _____

Round 1 2 3 4 5

#7 Prob and Stats – Hustle
MAΘ National Convention 2022

What are the number of distinct arrangements of the letters in the word **"regression"**?

Answer : _____

Round 1 2 3 4 5

#7 Prob and Stats – Hustle
MAΘ National Convention 2022

What are the number of distinct arrangements of the letters in the word **"regression"**?

Answer : _____

Round 1 2 3 4 5

#8 Prob and Stats – Hustle
MAΘ National Convention 2022

The standard error of the least squares sample slope, b, is written as SE_b. A test of significance of $H_0: \beta = 0 \; vs. \; H_A: \beta \neq 0$ is carried out at the 5% significance level and the t test statistic is t = 3.5. If the sample slope is b = 8.75, then SE_b equals what value?

Answer : _____

Round 1 2 3 4 5

#8 Prob and Stats – Hustle
MAΘ National Convention 2022

The standard error of the least squares sample slope, b, is written as SE_b. A test of significance of $H_0: \beta = 0 \; vs. \; H_A: \beta \neq 0$ is carried out at the 5% significance level and the t test statistic is t = 3.5. If the sample slope is b = 8.75, then SE_b equals what value?

Answer : _____

Round 1 2 3 4 5

#8 Prob and Stats – Hustle
MAΘ National Convention 2022

The standard error of the least squares sample slope, b, is written as SE_b. A test of significance of $H_0: \beta = 0 \; vs. \; H_A: \beta \neq 0$ is carried out at the 5% significance level and the t test statistic is t = 3.5. If the sample slope is b = 8.75, then SE_b equals what value?

Answer : _____

Round 1 2 3 4 5

#8 Prob and Stats – Hustle
MAΘ National Convention 2022

The standard error of the least squares sample slope, b, is written as SE_b. A test of significance of $H_0: \beta = 0 \; vs. \; H_A: \beta \neq 0$ is carried out at the 5% significance level and the t test statistic is t = 3.5. If the sample slope is b = 8.75, then SE_b equals what value?

Answer : _____

Round 1 2 3 4 5

#9 Prob and Stats – Hustle
MAΘ National Convention 2022

Researchers suspect that a relationship exists between socioeconomic status and smoking. The following two-way table was used:
(sample size 60)

	Socioeconomic Status		
Smoking Level	High	Middle	Low
Heavy	2	6	12
Moderate	4	8	8
Never	12	5	3

What are the degrees of freedom for the appropriate test of significance?

Answer : _____

Round 1 2 3 4 5

#9 Prob and Stats – Hustle
MAΘ National Convention 2022

Researchers suspect that a relationship exists between socioeconomic status and smoking. The following two-way table was used:
(sample size 60)

	Socioeconomic Status		
Smoking Level	High	Middle	Low
Heavy	2	6	12
Moderate	4	8	8
Never	12	5	3

What are the degrees of freedom for the appropriate test of significance?

Answer : _____

Round 1 2 3 4 5

#9 Prob and Stats – Hustle
MAΘ National Convention 2022

Researchers suspect that a relationship exists between socioeconomic status and smoking. The following two-way table was used:
(sample size 60)

	Socioeconomic Status		
Smoking Level	High	Middle	Low
Heavy	2	6	12
Moderate	4	8	8
Never	12	5	3

What are the degrees of freedom for the appropriate test of significance?

Answer : _____

Round 1 2 3 4 5

#9 Prob and Stats – Hustle
MAΘ National Convention 2022

Researchers suspect that a relationship exists between socioeconomic status and smoking. The following two-way table was used:
(sample size 60)

	Socioeconomic Status		
Smoking Level	High	Middle	Low
Heavy	2	6	12
Moderate	4	8	8
Never	12	5	3

What are the degrees of freedom for the appropriate test of significance?

Answer : _____

Round 1 2 3 4 5

#10 Prob and Stats – Hustle
MAΘ National Convention 2022

Researchers suspect that a relationship exists between socioeconomic status and smoking. The following two-way table was used:
(sample size 60)

	Socioeconomic Status		
Smoking Level	High	Middle	Low
Heavy	2	6	12
Moderate	4	8	8
Never	12	1	7

What is the expected value for the cell Middle Socioeconomic Status and Heavy Smoking Level assuming the two variables are independent?

Answer : _____

Round 1 2 3 4 5

#10 Prob and Stats – Hustle
MAΘ National Convention 2022

Researchers suspect that a relationship exists between socioeconomic status and smoking. The following two-way table was used:
(sample size 60)

	Socioeconomic Status		
Smoking Level	High	Middle	Low
Heavy	2	6	12
Moderate	4	8	8
Never	12	1	7

What is the expected value for the cell Middle Socioeconomic Status and Heavy Smoking Level assuming the two variables are independent?

Answer : _____

Round 1 2 3 4 5

#10 Prob and Stats – Hustle
MAΘ National Convention 2022

Researchers suspect that a relationship exists between socioeconomic status and smoking. The following two-way table was used:
(sample size 60)

	Socioeconomic Status		
Smoking Level	High	Middle	Low
Heavy	2	6	12
Moderate	4	8	8
Never	12	1	7

What is the expected value for the cell Middle Socioeconomic Status and Heavy Smoking Level assuming the two variables are independent?

Answer : _____

Round 1 2 3 4 5

#10 Prob and Stats – Hustle
MAΘ National Convention 2022

Researchers suspect that a relationship exists between socioeconomic status and smoking. The following two-way table was used:
(sample size 60)

	Socioeconomic Status		
Smoking Level	High	Middle	Low
Heavy	2	6	12
Moderate	4	8	8
Never	12	1	7

What is the expected value for the cell Middle Socioeconomic Status and Heavy Smoking Level assuming the two variables are independent?

Answer : _____

Round 1 2 3 4 5

#11 Prob and Stats – Hustle
MAΘ National Convention 2022

Jaime is given the following information about a bivariate set of data (x, y):

$r = 0.1$, $S_y = 1.2$, $S_x = 0.8$, $\bar{y} = 15$, $\bar{x} = 16$

Using this information, find the equation of the least squares line of best fit in slope intercept form.

Answer : _____

Round 1 2 3 4 5

#11 Prob and Stats – Hustle
MAΘ National Convention 2022

Jaime is given the following information about a bivariate set of data (x, y):

$r = 0.1$, $S_y = 1.2$, $S_x = 0.8$, $\bar{y} = 15$, $\bar{x} = 16$

Using this information, find the equation of the least squares line of best fit in slope intercept form.

Answer : _____

Round 1 2 3 4 5

#11 Prob and Stats – Hustle
MAΘ National Convention 2022

Jaime is given the following information about a bivariate set of data (x, y):

$r = 0.1$, $S_y = 1.2$, $S_x = 0.8$, $\bar{y} = 15$, $\bar{x} = 16$

Using this information, find the equation of the least squares line of best fit in slope intercept form.

Answer : _____

Round 1 2 3 4 5

#11 Prob and Stats – Hustle
MAΘ National Convention 2022

Jaime is given the following information about a bivariate set of data (x, y):

$r = 0.1$, $S_y = 1.2$, $S_x = 0.8$, $\bar{y} = 15$, $\bar{x} = 16$

Using this information, find the equation of the least squares line of best fit in slope intercept form.

Answer : _____

Round 1 2 3 4 5

#12 Prob and Stats – Hustle
MAΘ National Convention 2022

If a fair coin is flipped six times, what is the probability of obtaining at least two heads?

Answer : _____

Round 1 2 3 4 5

#12 Prob and Stats – Hustle
MAΘ National Convention 2022

If a fair coin is flipped six times, what is the probability of obtaining at least two heads?

Answer : _____

Round 1 2 3 4 5

#12 Prob and Stats – Hustle
MAΘ National Convention 2022

If a fair coin is flipped six times, what is the probability of obtaining at least two heads?

Answer : _____

Round 1 2 3 4 5

#12 Prob and Stats – Hustle
MAΘ National Convention 2022

If a fair coin is flipped six times, what is the probability of obtaining at least two heads?

Answer : _____

Round 1 2 3 4 5

#13 Prob and Stats – Hustle
MAΘ National Convention 2022

A researcher claims that, on average, 14–17-year-old teens spend more than 6 hours per day looking at their phones. The following hypotheses are used:

$H_0: \mu = 6$ versus $H_A: \mu > 6$

The probability we agree with the researcher and reject the null hypothesis by mistake even though 14–17-year-olds spend at most 6 hours per day on the phone is 0.025. The probability that we erroneously fail to conclude 14–17-year-olds spend more than 6 hours per day on their phone, when in fact they actually do spend more is, 0.17.

What is the power of this test?

Answer : _____

Round 1 2 3 4 5

#13 Prob and Stats – Hustle
MAΘ National Convention 2022

A researcher claims that, on average, 14–17-year-old teens spend more than 6 hours per day looking at their phones. The following hypotheses are used:

$H_0: \mu = 6$ versus $H_A: \mu > 6$

The probability we agree with the researcher and reject the null hypothesis by mistake even though 14–17-year-olds spend at most 6 hours per day on the phone is 0.025. The probability that we erroneously fail to conclude 14–17-year-olds spend more than 6 hours per day on their phone, when in fact they actually do spend more is, 0.17.

What is the power of this test?

Answer : _____

Round 1 2 3 4 5

#13 Prob and Stats – Hustle
MAΘ National Convention 2022

A researcher claims that, on average, 14–17-year-old teens spend more than 6 hours per day looking at their phones. The following hypotheses are used:

$H_0: \mu = 6$ versus $H_A: \mu > 6$

The probability we agree with the researcher and reject the null hypothesis by mistake even though 14–17-year-olds spend at most 6 hours per day on the phone is 0.025. The probability that we erroneously fail to conclude 14–17-year-olds spend more than 6 hours per day on their phone, when in fact they actually do spend more is, 0.17.

What is the power of this test?

Answer : _____

Round 1 2 3 4 5

#13 Prob and Stats – Hustle
MAΘ National Convention 2022

A researcher claims that, on average, 14–17-year-old teens spend more than 6 hours per day looking at their phones. The following hypotheses are used:

$H_0: \mu = 6$ versus $H_A: \mu > 6$

The probability we agree with the researcher and reject the null hypothesis by mistake even though 14–17-year-olds spend at most 6 hours per day on the phone is 0.025. The probability that we erroneously fail to conclude 14–17-year-olds spend more than 6 hours per day on their phone, when in fact they actually do spend more is, 0.17.

What is the power of this test?

Answer : _____

Round 1 2 3 4 5

#14 Prob and Stats – Hustle
MAΘ National Convention 2022

X and Y are independent random variables. The mean and variance of X are 12 and 9 respectively. The mean and variance of Y are 14 and 10 respectively. What is the sum of the mean and the standard deviation of random variable X + Y?

Answer : _____

Round 1 2 3 4 5

#14 Prob and Stats – Hustle
MAΘ National Convention 2022

X and Y are independent random variables. The mean and variance of X are 12 and 9 respectively. The mean and variance of Y are 14 and 10 respectively. What is the sum of the mean and the standard deviation of random variable X + Y?

Answer : _____

Round 1 2 3 4 5

#14 Prob and Stats – Hustle
MAΘ National Convention 2022

X and Y are independent random variables. The mean and variance of X are 12 and 9 respectively. The mean and variance of Y are 14 and 10 respectively. What is the sum of the mean and the standard deviation of random variable X + Y?

Answer : _____

Round 1 2 3 4 5

#14 Prob and Stats – Hustle
MAΘ National Convention 2022

X and Y are independent random variables. The mean and variance of X are 12 and 9 respectively. The mean and variance of Y are 14 and 10 respectively. What is the sum of the mean and the standard deviation of random variable X + Y?

Answer : _____

Round 1 2 3 4 5

#15 Prob and Stats – Hustle
MAΘ National Convention 2022

There is a strong negative linear relationship between the explanatory variable, the amount of weed killer used (in liters); and the response variable, the number of weeds present.

In fact, the proportion of variability in the number of weeds present explained by the LSRL of the number of weeds present versus amount of weed killer used is 0.81.

What is the correlation coefficient?

Answer : _____

Round 1 2 3 4 5

#15 Prob and Stats – Hustle
MAΘ National Convention 2022

There is a strong negative linear relationship between the explanatory variable, the amount of weed killer used (in liters); and the response variable, the number of weeds present.

In fact, the proportion of variability in the number of weeds present explained by the LSRL of the number of weeds present versus amount of weed killer used is 0.81.

What is the correlation coefficient?

Answer : _____

Round 1 2 3 4 5

#15 Prob and Stats – Hustle
MAΘ National Convention 2022

There is a strong negative linear relationship between the explanatory variable, the amount of weed killer used (in liters); and the response variable, the number of weeds present.

In fact, the proportion of variability in the number of weeds present explained by the LSRL of the number of weeds present versus amount of weed killer used is 0.81.

What is the correlation coefficient?

Answer : _____

Round 1 2 3 4 5

#15 Prob and Stats – Hustle
MAΘ National Convention 2022

There is a strong negative linear relationship between the explanatory variable, the amount of weed killer used (in liters); and the response variable, the number of weeds present.

In fact, the proportion of variability in the number of weeds present explained by the LSRL of the number of weeds present versus amount of weed killer used is 0.81.

What is the correlation coefficient?

Answer : _____

Round 1 2 3 4 5

#16 Prob and Stats – Hustle
MAΘ National Convention 2022

The six integers -10, -3, 0, 1, 9, 19 are a sample from a much larger data set that has the following five-number summary:

Min	Q1	Med	Q3	Max
-10	-7	-4	-1	22

How many of the six given integers, if any, from the sample are outliers?

Answer : _____

Round 1 2 3 4 5

#16 Prob and Stats – Hustle
MAΘ National Convention 2022

The six integers -10, -3, 0, 1, 9, 19 are a sample from a much larger data set that has the following five-number summary:

Min	Q1	Med	Q3	Max
-10	-7	-4	-1	22

How many of the six given integers, if any, from the sample are outliers?

Answer : _____

Round 1 2 3 4 5

#16 Prob and Stats – Hustle
MAΘ National Convention 2022

The six integers -10, -3, 0, 1, 9, 19 are a sample from a much larger data set that has the following five-number summary:

Min	Q1	Med	Q3	Max
-10	-7	-4	-1	22

How many of the six given integers, if any, from the sample are outliers?

Answer : _____

Round 1 2 3 4 5

#16 Prob and Stats – Hustle
MAΘ National Convention 2022

The six integers -10, -3, 0, 1, 9, 19 are a sample from a much larger data set that has the following five-number summary:

Min	Q1	Med	Q3	Max
-10	-7	-4	-1	22

How many of the six given integers, if any, from the sample are outliers?

Answer : _____

Round 1 2 3 4 5

#17 Prob and Stats – Hustle
MAΘ National Convention 2022

One way to calculate the probability of a full house (3 of one kind along with two of another, i.e., KKKQQ) in a 5-card poker hand from a standard deck of 52 cards is by using the method: $\frac{(4*6*A*B)}{\binom{52}{5}}$.

What is the value of 2(A+B)?

Answer : _____

Round 1 2 3 4 5

#17 Prob and Stats – Hustle
MAΘ National Convention 2022

One way to calculate the probability of a full house (3 of one kind along with two of another, i.e., KKKQQ) in a 5-card poker hand from a standard deck of 52 cards is by using the method: $\frac{(4*6*A*B)}{\binom{52}{5}}$.

What is the value of 2(A+B)?

Answer : _____

Round 1 2 3 4 5

#17 Prob and Stats – Hustle
MAΘ National Convention 2022

One way to calculate the probability of a full house (3 of one kind along with two of another, i.e., KKKQQ) in a 5-card poker hand from a standard deck of 52 cards is by using the method: $\frac{(4*6*A*B)}{\binom{52}{5}}$.

What is the value of 2(A+B)?

Answer : _____

Round 1 2 3 4 5

#17 Prob and Stats – Hustle
MAΘ National Convention 2022

One way to calculate the probability of a full house (3 of one kind along with two of another, i.e., KKKQQ) in a 5-card poker hand from a standard deck of 52 cards is by using the method: $\frac{(4*6*A*B)}{\binom{52}{5}}$.

What is the value of 2(A+B)?

Answer : _____

Round 1 2 3 4 5

#18 Prob and Stats – Hustle
MAΘ National Convention 2022

28% of the muffins sold at a bakery are blueberry, 60% are chocolate chip, and 12% are pumpkin. Half the blueberry muffins are low-fat, $\frac{2}{5}$ of the chocolate chip are low-fat and $\frac{1}{3}$ of the pumpkin are low-fat. A low-fat muffin is randomly selected, what is the probability it is blueberry?

Answer : _____

Round 1 2 3 4 5

#18 Prob and Stats – Hustle
MAΘ National Convention 2022

28% of the muffins sold at a bakery are blueberry, 60% are chocolate chip, and 12% are pumpkin. Half the blueberry muffins are low-fat, $\frac{2}{5}$ of the chocolate chip are low-fat and $\frac{1}{3}$ of the pumpkin are low-fat. A low-fat muffin is randomly selected, what is the probability it is blueberry?

Answer : _____

Round 1 2 3 4 5

#18 Prob and Stats – Hustle
MAΘ National Convention 2022

28% of the muffins sold at a bakery are blueberry, 60% are chocolate chip, and 12% are pumpkin. Half the blueberry muffins are low-fat, $\frac{2}{5}$ of the chocolate chip are low-fat and $\frac{1}{3}$ of the pumpkin are low-fat. A low-fat muffin is randomly selected, what is the probability it is blueberry?

Answer : _____

Round 1 2 3 4 5

#18 Prob and Stats – Hustle
MAΘ National Convention 2022

28% of the muffins sold at a bakery are blueberry, 60% are chocolate chip, and 12% are pumpkin. Half the blueberry muffins are low-fat, $\frac{2}{5}$ of the chocolate chip are low-fat and $\frac{1}{3}$ of the pumpkin are low-fat. A low-fat muffin is randomly selected, what is the probability it is blueberry?

Answer : _____

Round 1 2 3 4 5

#19 Prob and Stats – Hustle
MAΘ National Convention 2022

Find the constant c that makes the following function a discrete probability mass function defined on the three given values of x:

$f(x) = c(x^2 - x)$ for x = 0, 1, 2, 3.

Answer : _____

Round 1 2 3 4 5

#19 Prob and Stats – Hustle
MAΘ National Convention 2022

Find the constant c that makes the following function a discrete probability mass function defined on the three given values of x:

$f(x) = c(x^2 - x)$ for x = 0, 1, 2, 3.

Answer : _____

Round 1 2 3 4 5

#19 Prob and Stats – Hustle
MAΘ National Convention 2022

Find the constant c that makes the following function a discrete probability mass function defined on the three given values of x:

$f(x) = c(x^2 - x)$ for x = 0, 1, 2, 3.

Answer : _____

Round 1 2 3 4 5

#19 Prob and Stats – Hustle
MAΘ National Convention 2022

Find the constant c that makes the following function a discrete probability mass function defined on the three given values of x:

$f(x) = c(x^2 - x)$ for x = 0, 1, 2, 3.

Answer : _____

Round 1 2 3 4 5

#20 Prob and Stats – Hustle
MAΘ National Convention 2022

Determine the interquartile range of the following set of data: {1, 7, 9, 6, 14, 11, 26, 28, 17}.

Answer : _____

Round 1 2 3 4 5

#20 Prob and Stats – Hustle
MAΘ National Convention 2022

Determine the interquartile range of the following set of data: {1, 7, 9, 6, 14, 11, 26, 28, 17}.

Answer : _____

Round 1 2 3 4 5

#20 Prob and Stats – Hustle
MAΘ National Convention 2022

Determine the interquartile range of the following set of data: {1, 7, 9, 6, 14, 11, 26, 28, 17}.

Answer : _____

Round 1 2 3 4 5

#20 Prob and Stats – Hustle
MAΘ National Convention 2022

Determine the interquartile range of the following set of data: {1, 7, 9, 6, 14, 11, 26, 28, 17}.

Answer : _____

Round 1 2 3 4 5

#21 Prob and Stats – Hustle
MAΘ National Convention 2022

A 95% confidence interval for the proportion of high school seniors who have participated in sports is (0.22, 0.64).

Use this information to compute the margin of error for this confidence interval.

Answer : _____

Round 1 2 3 4 5

#21 Prob and Stats – Hustle
MAΘ National Convention 2022

A 95% confidence interval for the proportion of high school seniors who have participated in sports is (0.22, 0.64).

Use this information to compute the margin of error for this confidence interval.

Answer : _____

Round 1 2 3 4 5

#21 Prob and Stats – Hustle
MAΘ National Convention 2022

A 95% confidence interval for the proportion of high school seniors who have participated in sports is (0.22, 0.64).

Use this information to compute the margin of error for this confidence interval.

Answer : _____

Round 1 2 3 4 5

#21 Prob and Stats – Hustle
MAΘ National Convention 2022

A 95% confidence interval for the proportion of high school seniors who have participated in sports is (0.22, 0.64).

Use this information to compute the margin of error for this confidence interval.

Answer : _____

Round 1 2 3 4 5

#22 Prob and Stats – Hustle
MAΘ National Convention 2022

A shuttle service charges a flat $3 fee plus $2 per mile. At year's end, Marissa checks her shuttle service receipts and calculates her average cost per ride was $15 with a standard deviation of $6. Let A = mean length in miles of her shuttle rides. Let B = standard deviation of length of her shuttle rides in miles.

Compute A + B.

Answer : _____

Round 1 2 3 4 5

#22 Prob and Stats – Hustle
MAΘ National Convention 2022

A shuttle service charges a flat $3 fee plus $2 per mile. At year's end, Marissa checks her shuttle service receipts and calculates her average cost per ride was $15 with a standard deviation of $6. Let A = mean length in miles of her shuttle rides. Let B = standard deviation of length of her shuttle rides in miles.

Compute A + B.

Answer : _____

Round 1 2 3 4 5

#22 Prob and Stats – Hustle
MAΘ National Convention 2022

A shuttle service charges a flat $3 fee plus $2 per mile. At year's end, Marissa checks her shuttle service receipts and calculates her average cost per ride was $15 with a standard deviation of $6. Let A = mean length in miles of her shuttle rides. Let B = standard deviation of length of her shuttle rides in miles.

Compute A + B.

Answer : _____

Round 1 2 3 4 5

#22 Prob and Stats – Hustle
MAΘ National Convention 2022

A shuttle service charges a flat $3 fee plus $2 per mile. At year's end, Marissa checks her shuttle service receipts and calculates her average cost per ride was $15 with a standard deviation of $6. Let A = mean length in miles of her shuttle rides. Let B = standard deviation of length of her shuttle rides in miles.

Compute A + B.

Answer : _____

Round 1 2 3 4 5

#23 Prob and Stats – Hustle
MAΘ National Convention 2022

List in ascending rank order the following three events according to the size of the probability for each.

I. The probability that is takes exactly three rolls of a pair of dice to obtain doubles.

II. The probability that three flips of a fair coin will not result in at least one head.

III. The probability of rolling a sum of 3 or 11 with a pair of dice.

Answer : _____

Round 1 2 3 4 5

#23 Prob and Stats – Hustle
MAΘ National Convention 2022

List in ascending rank order the following three events according to the size of the probability for each.

I. The probability that is takes exactly three rolls of a pair of dice to obtain doubles.

II. The probability that three flips of a fair coin will not result in at least one head.

III. The probability of rolling a sum of 3 or 11 with a pair of dice.

Answer : _____

Round 1 2 3 4 5

#23 Prob and Stats – Hustle
MAΘ National Convention 2022

List in ascending rank order the following three events according to the size of the probability for each.

I. The probability that is takes exactly three rolls of a pair of dice to obtain doubles.

II. The probability that three flips of a fair coin will not result in at least one head.

III. The probability of rolling a sum of 3 or 11 with a pair of dice.

Answer : _____

Round 1 2 3 4 5

#23 Prob and Stats – Hustle
MAΘ National Convention 2022

List in ascending rank order the following three events according to the size of the probability for each.

I. The probability that is takes exactly three rolls of a pair of dice to obtain doubles.

II. The probability that three flips of a fair coin will not result in at least one head.

III. The probability of rolling a sum of 3 or 11 with a pair of dice.

Answer : _____

Round 1 2 3 4 5

#24 Prob and Stats – Hustle
MAΘ National Convention 2022

$\hat{y}$ = -1 + 4x is the LSRL for the linear relationship between
x = the number of beers consumed in an hour
y = the number of IQ points temporarily lost after the hour spent consuming beer.

Using the LSRL to predict Mahadev's IQ points lost after he drinks 8 beers results gives a residual value of 11. What was Mahadev's observed IQ points lost?

Answer : _____

Round 1 2 3 4 5

#24 Prob and Stats – Hustle
MAΘ National Convention 2022

$\hat{y}$ = -1 + 4x is the LSRL for the linear relationship between
x = the number of beers consumed in an hour
y = the number of IQ points temporarily lost after the hour spent consuming beer.

Using the LSRL to predict Mahadev's IQ points lost after he drinks 8 beers results gives a residual value of 11. What was Mahadev's observed IQ points lost?

Answer : _____

Round 1 2 3 4 5

#24 Prob and Stats – Hustle
MAΘ National Convention 2022

$\hat{y}$ = -1 + 4x is the LSRL for the linear relationship between
x = the number of beers consumed in an hour
y = the number of IQ points temporarily lost after the hour spent consuming beer.

Using the LSRL to predict Mahadev's IQ points lost after he drinks 8 beers results gives a residual value of 11. What was Mahadev's observed IQ points lost?

Answer : _____

Round 1 2 3 4 5

#24 Prob and Stats – Hustle
MAΘ National Convention 2022

$\hat{y}$ = -1 + 4x is the LSRL for the linear relationship between
x = the number of beers consumed in an hour
y = the number of IQ points temporarily lost after the hour spent consuming beer.

Using the LSRL to predict Mahadev's IQ points lost after he drinks 8 beers results gives a residual value of 11. What was Mahadev's observed IQ points lost?

Answer : _____

Round 1 2 3 4 5

#25 Prob and Stats – Hustle
MAΘ National Convention 2022

This Hustle test was made using a sampling design. I subjectively divided Prob and Stats into four categories: Exploratory Data Analysis, Sampling and Experimental Design, Probability, and Inference. I then took a simple random sample of problems I had written from within each of these four categories. The problems chosen from each category were used to create this Hustle round. The sampling design described above is that of a _____ random sample. Fill in the blank with the missing word.

Answer : _____

Round 1 2 3 4 5

#25 Prob and Stats – Hustle
MAΘ National Convention 2022

This Hustle test was made using a sampling design. I subjectively divided Prob and Stats into four categories: Exploratory Data Analysis, Sampling and Experimental Design, Probability, and Inference. I then took a simple random sample of problems I had written from within each of these four categories. The problems chosen from each category were used to create this Hustle round. The sampling design described above is that of a _____ random sample. Fill in the blank with the missing word.

Answer : _____

Round 1 2 3 4 5

#25 Prob and Stats – Hustle
MAΘ National Convention 2022

This Hustle test was made using a sampling design. I subjectively divided Prob and Stats into four categories: Exploratory Data Analysis, Sampling and Experimental Design, Probability, and Inference. I then took a simple random sample of problems I had written from within each of these four categories. The problems chosen from each category were used to create this Hustle round. The sampling design described above is that of a _____ random sample. Fill in the blank with the missing word.

Answer : _____

Round 1 2 3 4 5

#25 Prob and Stats – Hustle
MAΘ National Convention 2022

This Hustle test was made using a sampling design. I subjectively divided Prob and Stats into four categories: Exploratory Data Analysis, Sampling and Experimental Design, Probability, and Inference. I then took a simple random sample of problems I had written from within each of these four categories. The problems chosen from each category were used to create this Hustle round. The sampling design described above is that of a _____ random sample. Fill in the blank with the missing word.

Answer : _____

Round 1 2 3 4 5