

**#1 Probability & Statistics – Hustle  
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Find the mean of the following set of data:

72, 92, 61, 17, 99, 56, 65, 77, 74, 97

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#1 Probability & Statistics – Hustle  
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Round 1 2 3 4 5

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Round 1 2 3 4 5

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#2 Probability & Statistics – Hustle  
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Given  $P(A) = .7$ ,  $P(B) = .8$ , and events A and B are independent, find the value of the following:  
 $P(A \cup B) - P(A' \cap B')$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#2 Probability & Statistics – Hustle  
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Round 1 2 3 4 5

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Round 1 2 3 4 5

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Round 1 2 3 4 5

**#3 Probability & Statistics – Hustle  
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Given the following statistics:

$$\bar{x} = 50, s_x = 14, \bar{y} = 80, s_y = 7, r = .75$$

find the equation of the line of best fit in slope intercept form.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#3 Probability & Statistics – Hustle  
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Round 1 2 3 4 5

**#4 Probability & Statistics – Hustle  
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Find the mean of the following discrete distribution.

X	13	14	16	18	20	25
P(X)	.1	.2	.15	.2	.1	.25

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#4 Probability & Statistics – Hustle  
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Find the mean of the following discrete distribution.

X	13	14	16	18	20	25
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Round 1 2 3 4 5

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#5 Probability & Statistics – Hustle  
MA© National Convention 2019**

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A grocery store is trying to determine if there is a difference between the amounts of money spent by morning shoppers and evening shoppers. 144 morning shoppers and 144 evening shoppers are randomly selected. The morning shoppers spend an average of \$48 with a standard deviation of \$8. The evening shoppers spend an average of \$58 with a standard deviation of \$6. Assume that all conditions for inference have been met. Find the value of the test statistic that will be used to determine if there is a difference between the shoppers. Assume that the test statistic is positive.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#5 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Round 1 2 3 4 5

**#6 Probability & Statistics – Hustle  
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Mrs. Lynch gives an Algebra test. The results of her test form a normal distribution with mean 76 and standard deviation 5. Brian scored a 63 on the test and Julie scored a 90. Find the difference between Julie's and Brian's z scores. Assume that the difference is positive.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#6 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Round 1 2 3 4 5

**#7 Probability & Statistics – Hustle  
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60% of the students at Seminole High are female. 30% of the male students and 40% of the female students participate in extracurricular activities. A student is randomly selected from Seminole High. Find the probability that the student is male, given that they do not participate in extracurricular activities.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#7 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Round 1 2 3 4 5

**#8 Probability & Statistics – Hustle  
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Terry is trying to get her dog Sam to fetch a ball and bring it back to her. Sam fetches the ball and brings it back 20% of the time. Terry takes Sam to the park, and will not leave until Sam fetches the ball and brings it back to her. Find the probability that Sam fetches the ball and brings it back by the third attempt.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#8 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Round 1 2 3 4 5



**#9 Probability & Statistics – Hustle  
MA@ National Convention 2019**

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Every senior at Smith High takes a science class and a foreign language class. The results are below:

	Biology	Chemistry	Physics
Spanish	20	35	25
French	10	8	12
Japanese	6	3	1

A  $\chi^2$  test is done to determine if choices of science class and foreign language class are independent for the seniors. Find the expected number of seniors who take French and Chemistry.

**Answer :** \_\_\_\_\_

**Round 1 2 3 4 5**

**#9 Probability & Statistics – Hustle  
MA@ National Convention 2019**

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**Round 1 2 3 4 5**

**#10 Probability & Statistics – Hustle  
MA® National Convention 2019**

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Given that variables  $A$  and  $B$  are independent,  
and their statistics are:

$$\bar{A} = 65, s_A = 8, \bar{B} = 87, s_B = 12, r = .72,$$

find the standard deviation of the variable  
( $3A - 2B$ ).

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#10 Probability & Statistics – Hustle  
MA® National Convention 2019**

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#11 Probability & Statistics – Hustle  
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Shriya rolls a fair die six times. Find the probability that she rolls a prime number exactly four times.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#11 Probability & Statistics – Hustle  
MA© National Convention 2019**

---

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#11 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Round 1 2 3 4 5

**#11 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#12 Probability & Statistics – Hustle  
MA© National Convention 2019**

---

Given Mr. Green’s AP Statistics results:

Score	1	2	3	4	5
Probability	.2	.1	.3	.3	.1

Find the standard deviation of the results.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#12 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Given Mr. Green’s AP Statistics results:

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

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MA© National Convention 2019**

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MA© National Convention 2019**

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Find the standard deviation of the results.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#13 Probability & Statistics – Hustle  
MA© National Convention 2019**

---

Find the median of the following set of data:

82, 98, 9, 41, 89, 51, 35, 29, 92, 53

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#13 Probability & Statistics – Hustle  
MA© National Convention 2019**

---

Find the median of the following set of data:

82, 98, 9, 41, 89, 51, 35, 29, 92, 53

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#13 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Find the median of the following set of data:

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#13 Probability & Statistics – Hustle  
MA© National Convention 2019**

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82, 98, 9, 41, 89, 51, 35, 29, 92, 53

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#14 Probability & Statistics – Hustle  
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Find the standard deviation of the following set of randomly selected data:

1, 2, 3, 6, 7, 11

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#14 Probability & Statistics – Hustle  
MA© National Convention 2019**

---

Find the standard deviation of the following set of randomly selected data:

1, 2, 3, 6, 7, 11

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#14 Probability & Statistics – Hustle  
MA© National Convention 2019**

---

Find the standard deviation of the following set of randomly selected data:

1, 2, 3, 6, 7, 11

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#14 Probability & Statistics – Hustle  
MA© National Convention 2019**

---

Find the standard deviation of the following set of randomly selected data:

1, 2, 3, 6, 7, 11

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#15 Probability & Statistics – Hustle  
MA© National Convention 2019**

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There is a linear relationship between Mr. Scales' midterm exam scores and final exam scores. The equation is  $F = 3M - 25$ , where  $M$  is the midterm exam score and  $F$  is the final exam score. Ben scores a 56 on the midterm exam and an 88 on the final exam. Find the value of Ben's residual.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#15 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Round 1 2 3 4 5

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MA© National Convention 2019**

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Round 1 2 3 4 5

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MA© National Convention 2019**

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#16 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Phone company A is trying to determine if customer satisfaction differs when customers transfer their service from their former company to company A. Company A randomly selects 100 customers who went from company B to company A, and randomly selects 100 customers who went from company C to company A. 65 customers from company B and 55 customers from company C were satisfied with the transfer to company A. Find the standard deviation of the significance test used to determine if there is a difference in customer satisfaction between the two former companies.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#16 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Round 1 2 3 4 5

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Answer : \_\_\_\_\_

Round 1 2 3 4 5



**#17 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Lebron works on his free throw shooting every day. His free throw percentage is 65%. Each day after practice, Lebron shoots 81 free throws. Find the standard deviation of the number of free throws Lebron makes after each practice. Assume that each free throw is independent.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#17 Probability & Statistics – Hustle  
MA© National Convention 2019**

---

Lebron works on his free throw shooting every day. His free throw percentage is 65%. Each day after practice, Lebron shoots 81 free throws. Find the standard deviation of the number of free throws Lebron makes after each practice. Assume that each free throw is independent.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#17 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Round 1 2 3 4 5

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MA© National Convention 2019**

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#18 Probability & Statistics – Hustle  
MA© National Convention 2019**

---

The results of Ms. Corbin’s History test are a mean of 62 and a standard deviation of 12. Using a linear transformation, Ms. Corbin curves the test to produce a new mean of 75 and a new standard deviation of 8. Matt scored a 70 on the test. Find Matt’s score after the curve is applied.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#18 Probability & Statistics – Hustle  
MA© National Convention 2019**

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The results of Ms. Corbin’s History test are a mean of 62 and a standard deviation of 12. Using a linear transformation, Ms. Corbin curves the test to produce a new mean of 75 and a new standard deviation of 8. Matt scored a 70 on the test. Find Matt’s score after the curve is applied.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

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Round 1 2 3 4 5

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#19 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Given:

$$P(A) = .38, P(B) = .5, P(A|B') = .42, \text{ find } P(A' \cap B')$$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#19 Probability & Statistics – Hustle  
MA© National Convention 2019**

---

Given:

$$P(A) = .38, P(B) = .5, P(A|B') = .42, \text{ find } P(A' \cap B')$$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#19 Probability & Statistics – Hustle  
MA© National Convention 2019**

---

Given:

$$P(A) = .38, P(B) = .5, P(A|B') = .42, \text{ find } P(A' \cap B')$$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#19 Probability & Statistics – Hustle  
MA© National Convention 2019**

---

Given:

$$P(A) = .38, P(B) = .5, P(A|B') = .42, \text{ find } P(A' \cap B')$$

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#20 Probability & Statistics – Hustle  
MA@ National Convention 2019**

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In the senior class at Jones High, 52 students take English, 55 take Math, and 55 take Science. 28 seniors take English and Science, 24 take Math and Science, and 30 take English and Math. 17 seniors take all three classes, and every senior takes at least one of the classes. Find the total number of seniors at Jones High.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#20 Probability & Statistics – Hustle  
MA@ National Convention 2019**

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In the senior class at Jones High, 52 students take English, 55 take Math, and 55 take Science. 28 seniors take English and Science, 24 take Math and Science, and 30 take English and Math. 17 seniors take all three classes, and every senior takes at least one of the classes. Find the total number of seniors at Jones High.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#20 Probability & Statistics – Hustle  
MA@ National Convention 2019**

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In the senior class at Jones High, 52 students take English, 55 take Math, and 55 take Science. 28 seniors take English and Science, 24 take Math and Science, and 30 take English and Math. 17 seniors take all three classes, and every senior takes at least one of the classes. Find the total number of seniors at Jones High.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#20 Probability & Statistics – Hustle  
MA@ National Convention 2019**

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In the senior class at Jones High, 52 students take English, 55 take Math, and 55 take Science. 28 seniors take English and Science, 24 take Math and Science, and 30 take English and Math. 17 seniors take all three classes, and every senior takes at least one of the classes. Find the total number of seniors at Jones High.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#21 Probability & Statistics – Hustle  
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The results of Mr. Ferguson’s test form a normal distribution with a mean of 71 and a standard deviation of 8. Using the empirical percentages, find the probability that a student scored between 63 and 87 on Mr. Ferguson’s test.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#21 Probability & Statistics – Hustle  
MA© National Convention 2019**

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The results of Mr. Ferguson’s test form a normal distribution with a mean of 71 and a standard deviation of 8. Using the empirical percentages, find the probability that a student scored between 63 and 87 on Mr. Ferguson’s test.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#21 Probability & Statistics – Hustle  
MA© National Convention 2019**

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The results of Mr. Ferguson’s test form a normal distribution with a mean of 71 and a standard deviation of 8. Using the empirical percentages, find the probability that a student scored between 63 and 87 on Mr. Ferguson’s test.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#21 Probability & Statistics – Hustle  
MA© National Convention 2019**

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The results of Mr. Ferguson’s test form a normal distribution with a mean of 71 and a standard deviation of 8. Using the empirical percentages, find the probability that a student scored between 63 and 87 on Mr. Ferguson’s test.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#22 Probability & Statistics - Hustle  
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Given the following statistics:

$$\bar{x} = 75, s_x = 6, \bar{y} = 60, s_y = 10, y = \frac{20}{21}x - \frac{80}{7},$$

find the coefficient of determination.

**Answer :** \_\_\_\_\_

**Round 1 2 3 4 5**

**#22 Probability & Statistics - Hustle  
MA© National Convention 2019**

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Given the following statistics:

$$\bar{x} = 75, s_x = 6, \bar{y} = 60, s_y = 10, y = \frac{20}{21}x - \frac{80}{7},$$

find the coefficient of determination.

**Answer :** \_\_\_\_\_

**Round 1 2 3 4 5**

**#22 Probability & Statistics - Hustle  
MA© National Convention 2019**

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$$\bar{x} = 75, s_x = 6, \bar{y} = 60, s_y = 10, y = \frac{20}{21}x - \frac{80}{7},$$

find the coefficient of determination.

**Answer :** \_\_\_\_\_

**Round 1 2 3 4 5**

**#22 Probability & Statistics - Hustle  
MA© National Convention 2019**

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Given the following statistics:

$$\bar{x} = 75, s_x = 6, \bar{y} = 60, s_y = 10, y = \frac{20}{21}x - \frac{80}{7},$$

find the coefficient of determination.

**Answer :** \_\_\_\_\_

**Round 1 2 3 4 5**

**#23 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Amy is trying to determine if a standard die is fair. She rolls the die 60 times. Here are the results of the rolls:

Value	1	2	3	4	5	6
Frequency	6	11	8	10	14	11

Amy runs a  $\chi^2$  goodness of fit test to determine if the die is fair. Find the exact value of the  $\chi^2$  statistic.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#23 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#23 Probability & Statistics – Hustle  
MA© National Convention 2019**

---

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#23 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Frequency	6	11	8	10	14	11

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#24 Probability & Statistics – Hustle  
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Bill and Ted play a simple game with a standard deck of cards (no jokers). Bill takes a card randomly from the deck. If Bill chooses a face card or a card with a prime number on it, he wins 12 dollars. If Bill does not win the game, then Ted wins X dollars. Find the value of X for which the game is fair.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#24 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Bill and Ted play a simple game with a standard deck of cards (no jokers). Bill takes a card randomly from the deck. If Bill chooses a face card or a card with a prime number on it, he wins 12 dollars. If Bill does not win the game, then Ted wins X dollars. Find the value of X for which the game is fair.

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#24 Probability & Statistics – Hustle  
MA© National Convention 2019**

---

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Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#24 Probability & Statistics – Hustle  
MA© National Convention 2019**

---

Bill and Ted play a simple game with a standard deck of cards (no jokers). Bill takes a card randomly from the deck. If Bill chooses a face card or a card with a prime number on it, he wins 12 dollars. If Bill does not win the game, then Ted wins X dollars. Find the value of X for which the game is fair.

Answer : \_\_\_\_\_

Round 1 2 3 4 5



**#25 Probability & Statistics – Hustle  
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Find the interquartile range of the following set of data:

81, 10, 89, 2, 89, 96, 17, 4, 63, 43

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#25 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Find the interquartile range of the following set of data:

81, 10, 89, 2, 89, 96, 17, 4, 63, 43

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#25 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Find the interquartile range of the following set of data:

81, 10, 89, 2, 89, 96, 17, 4, 63, 43

Answer : \_\_\_\_\_

Round 1 2 3 4 5

**#25 Probability & Statistics – Hustle  
MA© National Convention 2019**

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Find the interquartile range of the following set of data:

81, 10, 89, 2, 89, 96, 17, 4, 63, 43

Answer : \_\_\_\_\_

Round 1 2 3 4 5

