Team #_____ Round 1 Score_____

1. Vivian has 10 metal straws, Amy has 18 metal straws, Weining has 36 metal straws, and Mr. Daly has 0 metal straws. What is the average amount of metal straws each person has?

2. Airforces are 4 inches tall and crocs are 3 inches tall. How tall would a stack of 10 Airforces and 13 crocs be?

3. Vivian eats 84 avocado toast a month. How many will she eat in a year?

Team #_____ Round 2 Score_____

1. If Henry Kwon runs a 3K in 1 minute, how many meters will he run in an hour?

2. What is one less than the product$18 * (- 19)$?

3. A rectangular prism is 5 m long, 4 m wide, and has a volume of 120 meters cubed. What is the sum of the lengths of its edges?

Team #_____ Round 3 Score_____

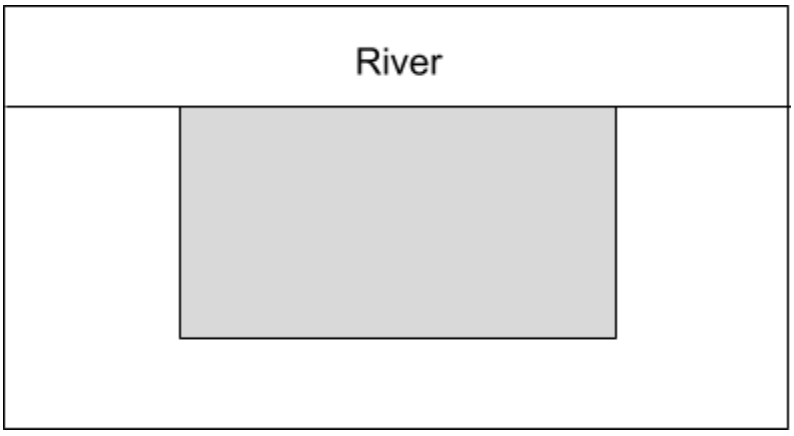
1. Jonathon rolls a 4-sided die 4 times. What is the probability he does not get 4 every time, expressed as a fraction?

2. Circle A has a radius of 5m around point P. Also around point P is Circle B, with a radius of 3m. What is the area in between Circle A and B?

3. Vivian goes to lulu lemon that advertises everything today is "half price." In addition, she found a coupon that gives a 10% discount on sale prices. Using the coupon and the half-price sale what percent of the original price is she paying.

Team #_____ Round 4 Score_____

1. Henry Kwon is stealing puppies and putting them in his backyard. He has three lengths of fence and a river enclosing the area of a rectangle, as shown below shaded. The area of the land is 36ft square. What is the minimum amount of fencing required to store his stolen puppies? The picture is not to scale.



2. The profit Brandy Melville makes in one day can be depicted by this polynomial, $p = 6x^2 - 4x + 32$, where P is profit and x represents the number of customers. How much money does Brandy Melville make if they receive 20 customers in one day?

3. In a box of pink, yellow, and blue friendship bracelets, all but 6 are pink bracelets, all but 8 are yellow, and all but 4 are blue. How many friendship bracelets are in the box?

Team #_____ Round 5 Score_____

1) At Albemarle High, there are 498 students in 9th grade. There are 188 students in "Saving the Turtles Club" and 63 students in the "VSCO Girl Club". 197 students aren't in either club. How many 9th graders are in both clubs?

2) How many two-digit numbers have digits whose sum is a perfect square?

3) The line $y = -\frac{1}{4}x + 8$ intersects a perpendicular line at (10, 46). What is the y-intercept of that perpendicular line? Express your answer as an ordered pair.

Team #_____ Round 6 Score_____

1) Vivian wants to give Weining six facemasks for her birthday. Vivian is going to a store where there are pomegranate, grapefruit and charcoal face masks. There are at least six of each type of facemask available at the store. How many different ways can Vivian buy Weining six facemasks? Note: Order does not matter

2) What is the smallest positive integer greater than 10 that is neither prime nor square and that has no prime factor less than 50?

3) An aquarium has a rectangular base that measures 100 cm by 40 cm and has a height of 50 cm. The aquarium is filled with water to a depth of 37 cm. A rock with volume 1000 cm^3 is then placed in the aquarium and completely submerged. By how many centimeters does the water level rise?

Team #_____ Round 7 Score_____

1) Working in pairs, Weining and Vivian can complete a job in 2 hours, Vivian and Amy can do the job in 3 hours, and Weining and Amy can do the same job in 4 hours. How many hours will it take for Weining, Vivian, and Amy working together to complete this job? Express your answer as a common fraction.

2) What is the sum of all numbers from 1 to 1001?

Team #_____ Round 8 Score_____

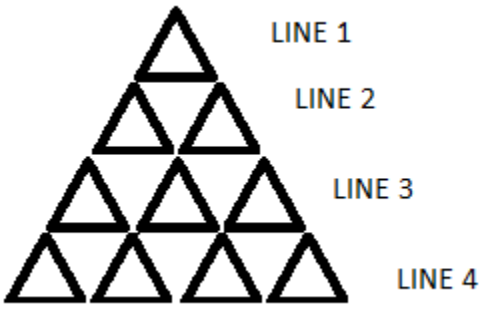
1. If $4! = 4 \times 3 \times 2 \times 1$and if x and $(x - 3)$ are considered factors of $x^2 - 3x$, how many factors would remain in the denominator of $\frac{(n-3)!}{(n+2)!n}$?

2. An equilateral triangle and a regular hexagon have equal perimeters. If the area of the triangle is 4, what is the area of the hexagon?

Team #_____ Round 9 Score_____

1. How many 4-digit positive integers have four different digits, where the leading digit is not zero, the integer is a multiple of 5, and 5 is the largest digit?

2. If the total number of triangles by line 2 is 4 triangles and the total number of triangles by line 3 is 9 triangles, how many triangles are in line 20 and line 19?



Team #_____ Round 10 Score_____

1) A square with a side length of 2 is drawn. Line segments are drawn connecting vertices to the midpoints of the sides of the squares as shown. This forms a square inside the larger square. The operation is repeated inside the new square, forming an even smaller square. What is the sum of the areas of all of the squares (we suggest you draw a picture)?

2) Two squares are chosen at random on a chessboard (8x8). What is the probability that they share a side?