Team #_____ **Round 1**

Score_____

1. Buzz Lightyear has a circle button to deploy his wings. What is the radius of the circle given, $x^2 + y^2 - 9 = 0$?

2. What is the sum of the prime factors of 2063?

3. The TARDIS is a rectangular prism with a height of 10 ft, and a width and depth of 5 ft. and has a volume of 1250 ft. What is its surface area?

Team #_____ **Round 2**

Score_____

1. A solar flare's path can be modeled by the function: $f(x) = 4x^2 + 3$. The path of an asteroid can be modeled by the function: $a(x) = x+2$, what is $f(a(2))$?

2. Chewbacca saw a flash of lighting. 10 seconds later, he heard the sound of thunder. The speed of sound is 1088 feet per second and 1 mile is 5280 feet. Estimate, to the nearest half-mile, how far Chewbacca was from the flash of lightning.

3. The number of tribbles on a starbase doubles every hour. If there are initially 100 tribbles on the starbase, how many will there be after 6 hours?

Team #_____ ˚ ✧ **Round 3** ✧ ˚

Score_____

1. The profit Quark's Bar makes one day can be depicted by $P = 6x^2 - 4x + 32$, where P is profit and x represents the number of customers. How much money does the bar make if it receives 20 customers in 1 day?

2. Wall-E collected an equilateral triangle and regular hexagon that have equal perimeters. If the area of the triangle is 4, what is the area of the hexagon?

3. Andy is going to Pizza Planet for dinner. Six pepperoni circles exactly fit across the diameter of a 12-inch pizza. If a total of 24 circles of pepperoni are placed on this pizza without overlap, what fraction of the pizza is covered by pepperoni?

Team #_____ ˚ ✧ **Round 4** ✧ ˚

Score_____

1. At Starfleet Academy, 30% of the students in the Command division are also studying in the Science division, and 80% of the students in the Science division are studying in the Command division. There are 15 students studying in the Science division. How many students are studying in the Command division?

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

3. The Doctor goes to a shop which advertises everything today is "half price." In addition he 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 he paying.

Team #_____ **Round 5**

Score_____

1. Picard, Deanna, Riker, and Worf are seated at random around a square table, one person to a side. What is the probability that Picard and Riker are seated opposite each other?

2. If C-3PO walks for 45 minutes at a rate of 4 mph and then runs for 30 minutes at a rate of 10 mph, how many miles will he travel at the end of 1 hour and 15 minutes?

3. Princess Leia is a picky eater, even when it comes to ice cream. At her favorite ice cream store, there are 20 different flavors, but she only likes 5 of them. Leia always gets 3 scoops where each scoop is a different flavor. How many different ice cream combinations is she willing to eat?

Team #_____ **Round 6**

Score_____

1. What is i^{57}?

2. Find the greatest common factor between 405 and 288.

3. Han Solo tosses a nickel 4 times. What is the probability that he gets at least as many heads as tails?

Team #_____ **Round 7**

Score_____

1. Spock is analyzing the positive factors of the number 60. What is the probability of a positive factor of 60 being less than 7?

2. Khan is designing stasis chambers with circles for his crew. In his design, 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. Consider the following function: Think of a whole number, square it, add 18, then subtract 11 times the original number. For how many whole numbers does this function output a negative number?

Team #_____ **Round 8**

Score_____

1. How many perfect cubes lie between $2^8 + 1$ and $2^{18} + 1$, inclusive?

2. There is a set of 5 positive integers whose average and median are equal to 5. The mode is 8. What is the difference between the largest and smallest integers in the set?

3. Sulu began scanning 44 planets at the rate of 3 planets per minute. 4 minutes later, Spock joined him and scanned at the rate of 5 planets per minute. When they finished, how many planets had Spock scanned?

Team #_____ **Round 9** **Score_____**

1. Kirk tosses 1 penny and Uhura tosses 2 pennies. What is the probability that Uhura gets the same number of heads as Kirk?

2. 6 people sit down at a table and eat a perfectly circular pizza of radius 7 in. They all eat the same amount, except for Yoda, who ate twice as much as everyone else. What is the area of the amount of pizza Yoda ate? (Leave your answer in the form $a\pi$)

3. Spock has challenged the android, Data, to a game of chess. Two squares are chosen at random on the chessboard. What is the probability that they have a side in common?
