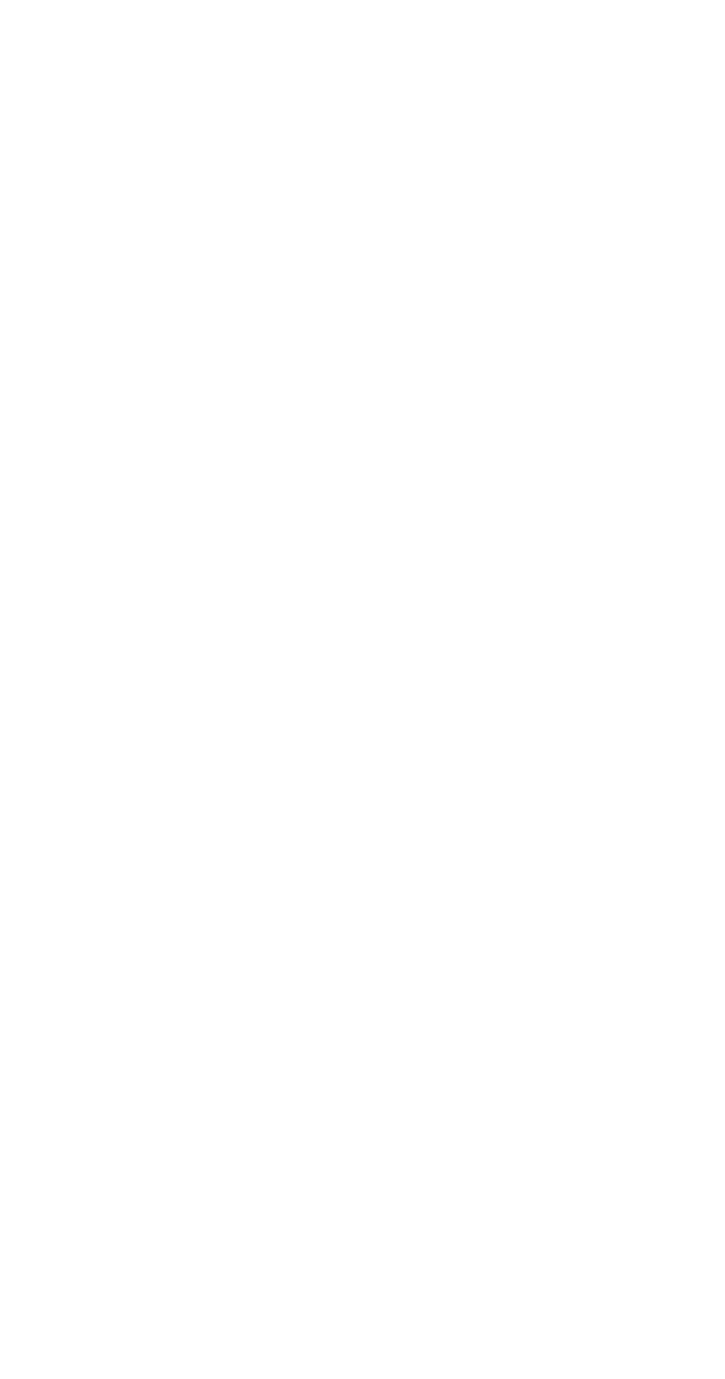
**Choose the letter of the correct answer. For all problems, E. NOTA means none of these answers.**

1. The spaceship USS Kenyon is docked at the International Space Station (ISS). The ISS is travelling at a speed of  kilometers per second relative to the Earth. What is the speed of USS Kenyon relative to the Earth in km/s in simplest form?



**A. 95 B. 5,500 C. 15,750 D. 27,500 E. NOTA**

1. Leon counts down for liftoff in a very unusual way. What is the 4th number in the following arithmetic sequence?

30, 21, 12, \_\_\_,…

**A. 0 B. 1 C. 2 D. 3 E. NOTA**

1. Rohan is at Leon’s Frozen Yogurt, which is at (3,5) on the galactic coordinate plane (a standard two dimensional plane). Kevin is at Townsend’s noodle vendor, which is at (-5,5). What is the **distance** between Rohan and Kevin?

**A. 5 B. 9 C. 16 D. 40 E. NOTA**

1. Doogles, stroogles, and boogles are three types of Intergalactic currency. Three doogles = 8 stroogles, and 10 stroogles = 3 boogles. Venkat is trying to trade 12 of his boogles for doogles. How many doogles is 12 boogles worth?

**A. 12 B. 15 C. 32 D. 40 E. NOTA**

1. Tabby’s star has an alien super-structure orbiting around it. This structure absorbs 80% of all energy that the star produces. Convert 80% to a fraction **in simplest form.**

**A.  B.   C.   D.  E. NOTA**

1. The temperature of space is approximately -455° Fahrenheit. Brandon wishes to use absolute value to find the temperature’s distance from 0. What is the value of | -455 |?

**A. -455 B. -1 C. 5 D. 455 E. NOTA**

1. Jennifer and Victoria take random spaceship routes every day. On any given day, Jennifer’s route has a  probability of passing through the Black Eye Galaxy. Similarly, Victoria’s route has a  probability of passing through the Black Eye Galaxy. The two probabilities are independent. On any given day, what is the probability that both Jennifer and Victoria’s routes pass through the Black Eye Galaxy?

**A.   B.   C.   D.  E. NOTA**

1. The two strongest things in the known universe are black holes and Hayden. When Hayden passes by the black hole, he is stretched to  of his original height of 175 cm. What is Hayden’s height when he passes the black hole, in cm?

**A. 270 B. 280 C. 290 D. 300 E. NOTA**

1. Tabby’s star is officially known as KIC 8462852. Which of the following divides 8462852 with remainder?

**A. 1 B. 2 C. 3 D. 4 E. NOTA**

1. Rohan and Douglas want to find a galaxy cluster that they are both satisfied with. Rohan wants the galaxy cluster to contain an amount of galaxies that is divisible by 27. Douglas wants to find a galaxy cluster that has an amount of galaxies that is divisible by 6. What is the smallest number of galaxies a galaxy cluster can contain that meets both of their needs?

**A. 27 B. 54 C. 108 D. 162 E. NOTA**

1. The distance from Galaxy A to Galaxy B is 30 light-years. Sri normally travels at the speed of light (1 light-year/year), but intergalactic traffic halved his speed. How long did it take Sri to travel from Galaxy A to Galaxy B and back, in years?

**A. 30 B. 60 C. 120 D. 240 E. NOTA**

1. In the Mice Galaxies, a special operation is frequently used: a $ b = a • b – b.

What is (2 $ 1) $ 5?

**A. 0 B. 5 C. 8 D. 10 E. NOTA**

1. Whenever Kevin travels to another galaxy, he brings his oversized smartphone with him, which is in the shape of a rectangle. The length of the phone is 5 times its width. The width is equal to the smallest positive prime number in inches. What is the area of this phone, in inches squared?

**A. 5 B. 20 C. 45 D. 125 E. NOTA**

1. Odessa tries to approximate the area of the Triangulum Galaxy by using a right triangle with a base 20 units long and a height 22 units long. What is the area of the model triangle, in units squared?

**A. 21 B. 42 C. 220 D. 440 E. NOTA**

1. Douglas, Zuhair, Correy, and Enrie bought star dust at the Galaxy Café, a place that is notorious for giving back the wrong amount of change. Douglas paid $10 for a $5.55 double scoop star dust cone and received $4.45 in change. Zuhair paid $5 for a $3.24 single scoop star dust cone with toppings and received $2.76 in change. Correy paid $1 for a $0.99 star dust bar and received a penny in change. Enrie paid $20 for a $15.80 quadruple scoop star dust cone and received $4.20. Who received the **incorrect** amount of change?

**A. Correy B. Douglas C. Enrie D. Zuhair E. NOTA**

1. Hoag’s Object is a non-typical galaxy with a ring circling around it. Alan wants to construct a spaceship to travel the perimeter of the ring. If the ring can be modeled by a circle with a diameter of 600 light years, how far must Alan’s spaceship travel in order to complete one trip around the ring, in light years?

1. **300π B. 600π C. 900π D. 36000π E. NOTA**
2. Irregular galaxies are thought to make up around one-fourth of all galaxies. One-fourth is categorized as which type of number?

**A. Integer B. Natural C. Rational D. Whole E. NOTA**

1. The nearest major galaxy to the Milky Way is the Andromeda Galaxy. How many distinct ways can you arrange the letters in “MILKY”, including the word “MILKY” itself

**A. 14 B. 20 C. 120 D. 240 E. NOTA**

1. Whenever travelling between galaxies, Andrew prefers to take wormholes, as he finds them more comfortable than spaceships. It takes Andrew 30 seconds to go through a wormhole to the Sombrero galaxy traveling at 40 parsecs per second. (A parsec is a unit of distance.) Then it takes 30 seconds to go through another wormhole from the Sombrero galaxy to the Whirlpool galaxy at 20 parsecs per second. What is Andrew’s average speed during his entire trip, in parsecs per second?

**A. 30 B. 32 C. 34 D. 36 E. NOTA**

1. Brandon is located near the center of the largest galaxy, IC 1101, where he is receiving an associate’s degree from the Galactic Institute of Technology. This is the last question on his final exam. Which of the following is an example of the associative property of addition?

**A. (5 + 9) + 3 = 5 + (9 + 3) B. 5 + 6 = 6 + 5**

**C. 4 + 2 + 0 = 0 + 2 + 4  D. 9(3 + 1) = 9 x 3 + 9 x 1 E. NOTA**

1. Alanna’s favorite galaxy cluster (which has 20 galaxies in it) is composed of five-armed spiral galaxies and seven-armed spiral galaxies. Alanna tells Joanna that the number of five-armed spiral galaxies in her galaxy cluster is equal to the second prime number. If this is true, what percent of the 20 galaxies in the cluster have seven arms?

**A. 5% B. 10% C. 15% D. 20% E. NOTA**

1. The sun takes around 230 million years to orbit around the Milky Way galaxy. Brandon wants to cryogenically freeze his body for 230 million years so that he can wake up after a full revolution. To dissuade Brandon from freezing himself, Julia expresses 230 million in scientific notation to make it easier for Brandon to understand. Which of the following is 230 million equivalent to?

**A. 2.3 x 108  B. 2.3 x 109  C. 230 x 108  D. 230 x 109   E. NOTA**

1. The Fidget Spinner Galaxy spins around a supermassive black hole at its center. The equation to calculate how much gravitational force there is between two objects is given below, where G = 3, m = 2, M = 4, and d = 5. Find F.



**A.   B.   C.   D.   E. NOTA**

1. The tilt of the Salt Galaxy can be modeled as a line. The two endpoints that represent the edges of the galaxy is (3,6) and (5,9). What is the slope of the line that intersects these two points?

**A.   B.   C.   D.   E. NOTA**

1. Alex Y. and Alex H. are going to the Starburst galaxy, known for their famous starbursts. They buy one starburst of each of the original four flavors: Strawberry, Lemon, Orange, and Lime. How many different ways can Alex and Alex distribute the 4 starbursts so that each gets at least one starburst? (Example of one possible distribution: Alex Y. gets Strawberry and Alex H gets Lemon, Orange, and Lime.)

**A. 6 B. 8 C. 10 D. 12 E. NOTA**

1. The speed of light is very, very, very fast. (Almost as fast as Sanic!) If I move at the speed of light, what is the number of years it would take me to travel across a distance of 30 million light years?

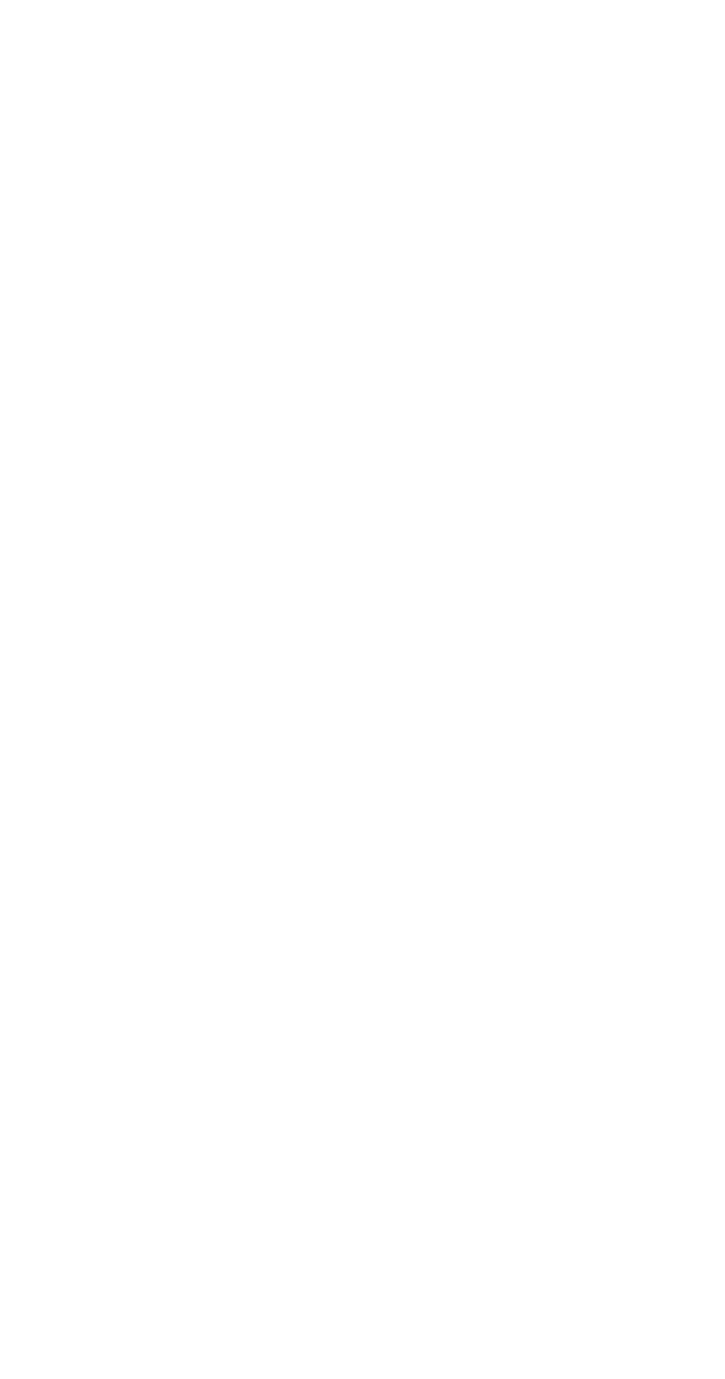
**A. 10,000,000 B. 30,000,000 C. 100,000,000**

**D. 300,000,000 E. NOTA**

1. The Milky Way and our neighboring galaxy, Andromeda, are set on a collision course to become Milkomeda. The path of the Milky Way is modeled as . If Andromeda’s path is linear and perpendicular to the path of the Milky Way, what is the slope of Andromeda’s path?
2. **-3  B.** **C.   D. 3  E. NOTA**
3. The Milky Way galaxy, the galaxy that you are taking this test in, is moving through space at a speed of 343 miles per second. What is the prime factorization of 343?

**A. 35 B. 3 x 72 C. 55 D. 73 E. NOTA**

1. In order for one to be granted entrance into the Fibonacci Galaxy, one must complete a special sequence. Find the 10th term in the following sequence.

 1, 1, 2, 3, 5, 8, \_\_\_, \_\_\_, \_\_\_, \_\_\_, …

**A. 5 B. 20 C. 67 D. 80 E. NOTA**

1. Andrew is going on an inter-galactic voyage. When he visited his first galaxy, he said “Yeah, yeah, yeah.” When he visited the next galaxy, he said “Yeah, yeah, yeah, yeah.” He continued this pattern, saying a series of “yeahs” after seeing a galaxy, adding one more each time. If Andrew saw a total of 30 galaxies on his inter-galactic voyage, how many total “yeahs” did he say?

**A. 30 B. 90 C. 525 D. 528 E. NOTA**