**Choose the letter of the answer to each problem. In all cases, NOTA means “none of these answers”.**

1. In Remy’s pack of rats, there are 20 black rats, 55 brown rats, 10 white rats, and 35 gray rats. What fraction of the rats in Remy’s pack is brown?
2. ** B)  C)  D)  E) NOTA**
3. Find the sum of the range and median of the following data set: 3, 5, 7, 2, 9, 12, 4, 6, 5.

**A) 5 B) 10 C) 15 D) 17 E) NOTA**

1. Evaluate: .
2. **-10 B) -8 C) 8 D) 10 E) NOTA**
3. Simplify: .
4. ** B)  C)  D) cannot be simplified**

**E) NOTA**

1. Remy’s father gave him the job as poison detector, so he’s stuck everyday sniffing for rat poison in the food the pack brings back. As a young rat walks up to him and asks if the food it brought back has poison in it, Remy decides to ease some of his boredom by asking the young rat a math question. “If you answer this question correctly,” Remy says, “I’ll tell you if that food has poison in it. If one block of cheese is worth twenty carrots and ten carrots are worth 4 apples, then one block of cheese is worth how many apples?”

**A) 2 B) 8 C) 12 D) 16 E) NOTA**

1. What is the slope of a line that passes through the points (3 , 7) and (-13 , 25)?
2. ** B)  C)  D)  E) NOTA**
3. Everything tastes better with spices! Being the smart rat that he is, Remy manages to sneak into an old lady’s house (along with his brother) and find her stash of spices. Suppose that there are forty different types of spices available, and each type of spice is held in its own individual container. Each container is labeled with a number, from 1 to 40. He doesn’t want to use *all* of the spices, so Remy decides to use the containers whose numbers appear in the following sequence:

1, 3, 7, 15, \_?

What is the next number?

**A) 27 B) 31 C) 35 D) 39 E) NOTA**

1. Oh no, they’ve been caught! The old lady has grabbed her gun and is shooting at Remy and his brother at a constant rate of 3 bullets/sec. She only has 45 bullets available before she runs out. At this rate, how many seconds will she have before she runs out of bullets, assuming that she does not stop shooting until she runs out of bullets?

**A) 12 B) 15 C) 18 D) 45 E) NOTA**

1. Remy and his brother manage to avoid getting shot – but now the roof is falling down, and with it, the entire pack of rats that happened to be living in the roof! Every rat is scrambling to get out of the house in time, but the only way out is a small hole in the wall. If and x is equal to the number of rats that can fit through the hole at any given time, what is 3x?

**A) 18 B) 24 C) 27 D) 42 E) NOTA**

1. If *a*☺*b* = , what is (2☺3)☺1?

**A) 12 B) 14 C) 32 D) 38 E) NOTA**

1. If , find .

**A) 200 B) 264 C) 296 D) 300 E) NOTA**

1. Head for the boats! After successfully escaping from the ruined house, the rats are boarding their makeshift umbrella boats and heading down the river. Remy, however, lags behind as he’s carrying Gusteau’s cook book with him. The book is 8 inches wide, 9 inches high, and 7 inches thick. What is the volume of the book in cubic inches? Assume the book is a rectangular prism.

**A) 24 B) 378 C) 432 D) 504 E) NOTA**

1. Oh no! A strong current separates Remy from the rest of the pack and carries him off course. He starts at the point (2 , 5), is carried 4 units to the left, then 7 units down. Find the midpoint between his starting and ending points.

**A) (-2 , -2) B) (0 , -2) C) (0 , 1.5) D) (6 , 12) E) NOTA**

1. Express in simplest terms. Assume *x*, *y*, and *z* are all positive numbers.
2. ** B)  C)  D) **

**E) NOTA**

1. After ending up in an underground tunnel, Remy’s boredom eventually causes him to start hallucinating. More specifically, he starts conversing with the “spirit of Gusteau” himself! In an attempt to relieve Remy’s boredom, the famous chef asks him a question. “Well, Remy. What is the greatest common factor ofand ?” Answer Gusteau’s question.
2. ** B)  C)  D)  E) NOTA**
3. After answering the previous question, Remy soon finds himself bored again. It is then that Gusteau comes up with a new idea – he suggests Remy go up and watch the staff of the restaurant Gusteau’s in action. Making his way up to the kitchen skylight, Remy spots Linguini messing up the soup! Horrified, Remy hurries to intervene before the soup is beyond saving. Given that Remy starts at the point (0, 4) and he needs to get to point (6, 2), which equation below could be the straight line that Remy takes to get to the soup?
4. ** B)  C)  D) **

**E) NOTA**

1. After successfully saving the soup, Remy is caught by Linguini, who ends up taking the rat home with him. The next morning, Remy gets up early to prepare breakfast. Raiding the refrigerator, he sees 4 different types of entrees, 12 different types of main courses, and 3 different types of drinks. Supposing that breakfast must consist of one entrée, one main course, and one type of drink, how many possible combinations does Remy have available to him for breakfast?

**A) 19 B) 36 C) 72 D) 144 E) NOTA**

1. Given that 20% of *x* equals 40% of *y* and *y* is equal to 80% of *z*, find, with *y* equal to 16.

**A) 40 B) 32 C) 20 D) 16 E) NOTA**

1. Linguini and Remy started the day out with 100 onions. After the day’s customers have been served, they discover that they only have 27 onions remaining in stock. Linguini is surprised and asks, “Just what percent of our original amount of onions did we use today?” The answer to Linguini’s question is:

**A) 27% B) 42% C) 58% D) 73% E) NOTA**

1. Remy is reunited with his brother! Upon seeing his brother stuffing garbage into his chubby mouth, Remy is horrified and runs to grab a small chuck of cheese from the restaurant’s storage room. When he sees it, Remy’s brother tries to grab the cheese, but Remy refuses to give it to him unless he answers a math question (just because). “Listen, Emile. Express the following using only positive exponents: .
2. ** B)  C)  D)  E) NOTA**
3. As Gusteau’s becomes more and more famous, Remy and Linguini are finding themselves having to work many hours! In fact, they work every hour the restaurant is open. The restaurant is open from 8:00 AM to 11:00 PM Monday thru Friday, 8:00 AM to midnight on Saturday, and 11:00 AM to 11:00 PM on Sunday, how many hours do they work per week?

**A) 75 hours B) 91 hours C) 103 hours D) 105 hours E) NOTA**

1. After having an argument with Remy, Linguini throws the rat out of the restaurant and tells him he never wants to see Remy ever again. Angry, Remy asks his pack to help him raid the kitchen. Remy’s dad, the pack leader, agrees to lend his son some help only if Remy manages to solve a math problem (these rats really like math). “See if you can solve this one, son. Solve for *x* in terms of the other three variables: .”
2. ** B)  C)  D)  E) NOTA**
3. Oh no! Remy has been caught in a rat trap! Remy’s dad and brother rush to help him, but they only have 15 minutes to save him! They spend  of the total amount of time it takes them to save Remy to track down and get to Remy’s cage. They then spend  of the remaining time to actually open the cage and set Remy free, leaving them with how many minutes left?

**A) 4 B) 5 C) 6 D) 7 E) NOTA**

1. Solve for *x*: .
2. ** B)**  **C)  and **

**D) OR  E) NOTA**

1. Back at the restaurant, Linguini suddenly realizes that they’re out of onions and carrots. Upon hearing this, Collete jumps on her shiny motorcycle and starts driving to the nearest farmer’s market along the line

3x – y = -8. Meanwhile, Linguini notices that they need a new cooking pot as well, and jumps into a taxi heading for the nearest hardware store. Both Collete and the taxi are traveling along straight lines that happen to be parallel to each other. Given this information, what is the slope of the line the taxi is traveling along?

**A) -3 B)  C)  D) 3 E) NOTA**

1. Suppose that Ego is 6 feet tall and is standing near a sign that is 10 feet high. If the sign’s shadow extends 20 feet away from the sign and Ego is standing in the sign’s shadow with the end of his shadow being at the same point where the sign’s shadow stops, how far away from the sign is Ego?

**A) 4 feet B) 8 feet C) 12 feet D) 14 feet E) NOTA**

1. A line has a slope of . Find the slope of a line perpendicular to this line.
2. ** B)  C)  D)  E) NOTA**
3. If , which of the following values could be *x*?

**A) 4 B) 5 C) 7 D) 9 E) NOTA**

1. After finishing in the kitchen, Linguini, Collete, and Remy (inside Linguini’s chef’s hat) present Ego with their variation of Ratatouille. Ego eats slowly and carefully, savoring every bite. Ego’s happiness level at any given time while he’s eating the ratatouille can be expressed in the form , where *h(x)* is his current happiness level, *x* is the number of bites he’s taken of the ratatouille so far, and *y* is an positive unknown constant, what is *y* when Ego’s happiness level is 144 and he’s taken one bite of ratatouille?

**A) 6 B) 8 C) 12 D) 16 E) NOTA**

1. Solve for *x*: 
2. ** B)  C)  D)  E) NOTA**