249. The local swimming pool is open every day. Swimming classes are offered according to the following schedule.

| **Type of Lesson** | **Number of Times offered Per Day** | **Days Offered** |
|---|---|---|
| Tiny Tots | 2 | Mon., Tues., Wed., Fri., Sat. |
| Beginner | 3 | Sun., Mon., Tues., Thurs., Fri., Sat. |
| Intermediate | 2 | Sun. Wed., Thurs., Sat. |
| Advanced | 1 | Sat. Sun. |
| Advanced | 2 | Tues., Thurs. |

On which day of the week are the most lessons offered?

_____

. . . . . .

250. Megan said: My favorite number is a perfect square. Charles said: My favorite number has two digits. Ann said: My favorite number is four more than a multiple of five. Bob said: My favorite number is less than 60. It turns out that Megan, Charles, Ann, and Bob all have the same favorite number. What is their favorite number?

_____

. . . . . .

251. Mr. Johnson has 35 students in his class. The desks are arranged in a rectangle. There are 5 rows, with 7 desks in each row. Cindy wants to sit in a desk so that someone is sitting directly in front, behind, to the left, and to the right of her. How many different desks could Cindy sit in and satisfy these conditions?

_____ desks

. . . . . .

252. During a 24-hour period in February 1978, Boston had a snowfall that averaged 3.175 cm of snow per hour. How many inches of snow fell in Boston during this 24-hour period?
Fact: 1 inch = 2.54 cm

_____ inches

. . . . . .

253. Mandy Jackson rented a car. She had 3 plans to choose from.

| | |
|---|---|
| Plan A | $42 per day |
| Plan B | $29 per day and 10 cents per mile |
| Plan C | 37 cents per mile |

Mandy rented the car for 4 days and drove 440 miles. Luckily, Mandy had selected the plan that cost her the least amount of money. What did she pay for the car rental? Note: Sales tax is already included in the prices in the chart.

$_____

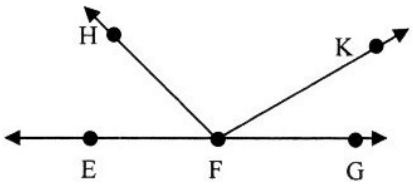
. . . . . .

254. Tonya left home and walked to the bus stop in 8 minutes. Eleven minutes after she arrived at the bus stop, she got on the bus and rode 32 minutes to school. The bus arrived at school at 7:41 a.m. What time did Tonya leave home?

_____ a.m.

. . . . . .

255. In the drawing below, EFG is a straight line. Which of the following is an obtuse angle?




A. ∠EFH B. ∠EFG C. ∠KFG D. ∠EFK

Write the letter of the correct choice on the blank to the right.

_____

. . . . . .

256. A coin machine returns 2 nickels for each dime, 5 pennies for each nickel, and 2 dimes and 1 nickel for each quarter. Amy had 2 quarters, 1 dime, and 3 nickels. She put each of these 6 coins through the machine once. When she was finished, she took any dimes she received and put them through the machine one more time. How many coins did she have when she was finished?

_____coins

. . . . . .

257. Amalia's favorite fraction is equivalent to $\frac{3}{4}$ and its denominator is 24. What is the <u>numerator</u> of Amalia's favorite fraction?

_____

. . . . . .

258. Melinda has 3 dimes and 3 quarters. She likes to use exact change whenever she makes a purchase. A sign in a store reads:

| **Item** | **Cost (including sales tax)** |
|---|---|
| marker | 40 cents |
| pen | 65 cents |
| notebook | 85 cents |
| magazine | 90 cents |

Which one of the 4 items can she buy using exact change?

_____

. . . . . .

259. Which one of the four numbers below is <u>not</u> divisible by each of its digits?

438 735 936 348

_____

. . . . . .

260. James wants to buy a special birthday present for his sister, whose birthday is 8 weeks away. However, James has no money and the present costs $72, including sales tax. During each of the next 8 weeks, he will collect an allowance of $6 per week. He will also receive an additional $4 for each special job that he completes. He plans to save all of this money in order to buy his sister's present. How many special jobs must James complete in order to buy the birthday present?

_____ special jobs

. . . . . .

261. Luke is $2\frac{1}{2}$ inches taller than Marty. Marty is $\frac{3}{4}$ inch taller than Kelli. How much taller than Kelli is Luke? Write your answer as a mixed number in simplest form.

_____ inches

. . . . . .

262. In the 1968 Olympic Games, Bob Beamon set a world record in the long jump with a distance of 8.90 meters. This was 65 centimeters longer than the previous world record. What was the world record, in meters, immediately prior to Bob Beamon's record jump?

_____ meters

. . . . . .

263. Kris recorded the total amount of time she watched television on Saturday morning. 50% of the time was spent watching a sports program. 40% of the time was spent watching cartoons. The remaining 12 minutes was spent watching the end of a movie. How many minutes did Kris spend watching cartoons on Saturday morning?

_____ minutes

. . . . . .

264. Sarah has forgotten her two-digit locker number. She remembers that

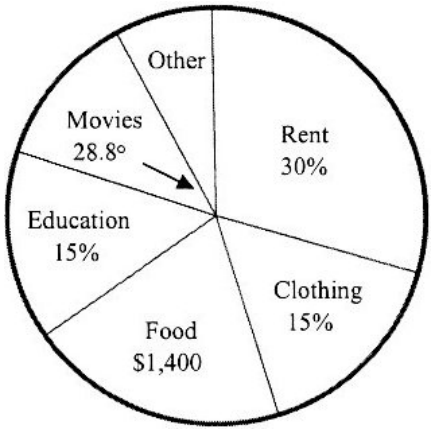
* the digits are two different perfect square numbers.
* it is an odd number.
* it is divisible by 13.

What is Sarah's locker number?

_____

. . . . . .

Trina totaled her expenses for last year and displayed the results in the circle graph shown below.




Use the information in the graph to answer questions 265-268 below.

265. What is the measure of the central angle for the sector labeled Education?

_____ degrees

. . . . . .

266. Trina's total expenses for last year were $7,000. How much money did Trina spend on rent and clothing combined? $ _____

. . . . . .

267. What percent of Trina's total expenses of $7,000 was spent on food?

_____ percent

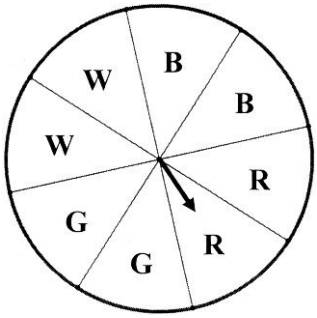
. . . . . .

268. What fraction of the total expenses of $7,000 was spent on movies? Write the fraction in simplest form.

_____

. . . . . .

An experiment consists of tossing a fair coin and then spinning the spinner shown below.




The spinner is designed so that the arrow will always stop in one of the eight equal sectors shown. Use the above information to answer questions 269 - 271.

269. The letters B (blue), R (red), G (green) and W(white) are used to represent the associated colors. The list below shows some of the combined outcomes of the experiment, with H and T representing heads and tails respectively.

HB TB HR TR . . .

For example, HB represents head on the coin and blue on the spinner.

How many entries should be in the complete list of combined outcomes?

_____ entries

. . . . . .

270. Find the probability that the coin will show tails (T) and the spinner will land in one or the other of the sectors labeled W. Write the answer as a fraction in simplest form.

_____

. . . . . .

271. The primary colors are blue, red, and yellow. Find the probability that the coin will show heads (H) and the arrow will not stop on a primary color. Write the answer as a fraction in simplest form.

_____

. . . . . .

272. The average reading test score of a class of 25 students was 16 out of 20 possible points. The 13 girls in the class scored a total of 182 points. How many total points did the boys score?

_____ points

. . . . . .

273. Gerry went on a trip. She left home at 9:25 a.m. and returned home 8 days, 19 hours, 47 minutes later. What time did Gerry arrive home? Be sure to include either a.m. or p.m. in your answer.

_____

. . . . . .

274. Natasha has 3 quarters, 6 dimes, 6 nickels, and 8 pennies in her piggy bank. What is the greatest number of these coins she could use to make $1.56?

_____ coins

. . . . . .

275. The shower in Tom's bathroom uses 4.5 gallons of water per minute. How many ounces per second is this? Do not round your answer.

Facts: 1 quart = 32 ounces 4 quarts = 1 gallon

_____ ounces per second

. . . . . .

276. Bill and Don plan to meet at the park at 4:30 p.m. Bill thinks his watch has the correct time, but it is really 10 minutes fast. Don thinks his watch has the correct time, but it is really 5 minutes slow. Both arrive at the park when their respective watches say the time is 4:30 p.m. Which of the following statements is true?

A. Don arrives 15 minutes before Bill.
B. Bill arrives 15 minutes before Don.
C. Bill arrives 5 minutes before Don.
D. Don arrives 5 minutes before Bill.

Write the letter of the correct choice on the blank to the right.

_____

. . . . . .

277. The perimeter of a rectangle is 42.5 cm and the length of the rectangle is 14 cm. Find the area of this rectangle.

_____ square cm

. . . . . .

278. When the product of three different prime numbers is multiplied by 4, the result is 4004. What is the sum of these three prime numbers?

_____

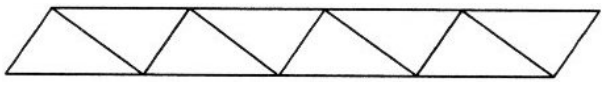
. . . . . .

279. Abe, Bob, Cal, Don, and Ed each have a different favorite number. The favorite numbers are 11, 12, 13, 16, and 19. Abe's number is 3 more than Ed's number. Cal's number is one less than Don's. Don's number is prime. What is Bob's number?

_____

. . . . . .

280. How many trapezoids of all sizes are in the parallelogram-shaped diagram below?
Note: Every two adjacent triangles in the diagram form a parallelogram.



_____ trapezoids

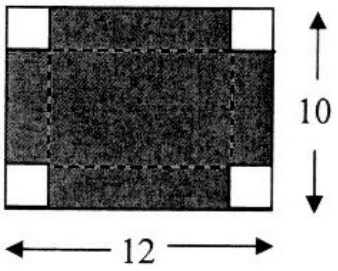
. . . . . .

281. A taxi company charges $2.20 for the first mile and $0.45 for each additional mile or part of a mile. Juanita rode for 21.7 miles and gave a tip of $3.00. How much did Juanita spend on this ride?

$_____

. . . . . .

282. Sharon had a rectangular piece of cardboard that measured 10 inches by 12 inches. She cut a square that measured 2 inches on a side from each corner of the cardboard. Next she folded up the sides to form an open box. What is the area of the bottom of the resulting box?
Note: The dotted lines in the diagram are the fold lines.




_____ square inches

. . . . . .

283. What fraction has a value that is 75% larger than $\frac{3}{8}$?

_____

. . . . . .

284. The Ferris wheel was invented for Chicago's 1893 World's Fair. The original Ferris wheel had 36 cars, each of which could hold 60 people. On the very first ride, the wheel was filled to 55% capacity. How many people were on the very first Ferris wheel ride?

_____ people

. . . . . .

285. Every 24 hours, approximately 10 billion skin cells are shed off a human body. Based on this information, approximately how many skin cells will you shed during the 15 minutes you are allowed for this portion of the Math Masters exam?

A. 1 million B. 10 million C. 100 million D. 1 billion

_____

. . . . . .

286. The cat kingdom is holding its annual jumping contest! Kit and Max jump a total distance of 6.32 meters. (Cats are very precise at measuring their jumps.) Max can jump 1.14 meters farther than Kit. How far can Kit jump? Do not round your answer.

_____ meters

. . . . . .

287. Jamal earned money mowing his neighbor's lawn. With this money, he bought two pens for $0.49 each and one notebook for $1.40, including tax. He spent half of what he had left on a milkshake, after which $2.06 of his lawn-mowing money remained. How much money did Jamal earn mowing the lawn?

$_____

. . . . . .

288. Find the sum of $\frac{1}{2}$ of $\frac{3}{4}$ and $\frac{1}{3}$ of $\frac{3}{4}$. Write your answer as a fraction in simplest form.

_____

. . . . . .

289. Ramone has dimes and quarters in his pocket. He has fewer than 10 of these coins, and they have a value of $1.65. How many quarters are in Ramone's pocket?

_____ quarters

. . . . . .

290. Luis's favorite two-digit number has these properties: It is a prime number. It is one less than a multiple of 9. Both digits are prime numbers. What is Luis's favorite two-digit number?

_____

. . . . . .

291. Deena ate $\frac{1}{6}$ of a large pizza. Celeste ate one-half of what was remaining, then Samuel ate the rest. What fraction of the whole pizza did Samuel eat?

_____

. . . . . .

292. The record running speed of a giraffe is 34.7 miles per hour. At this rate, how many feet will a giraffe travel in one minute? Round your answer to the nearest foot. Fact: 1 mile = 5280 feet.

_____ feet

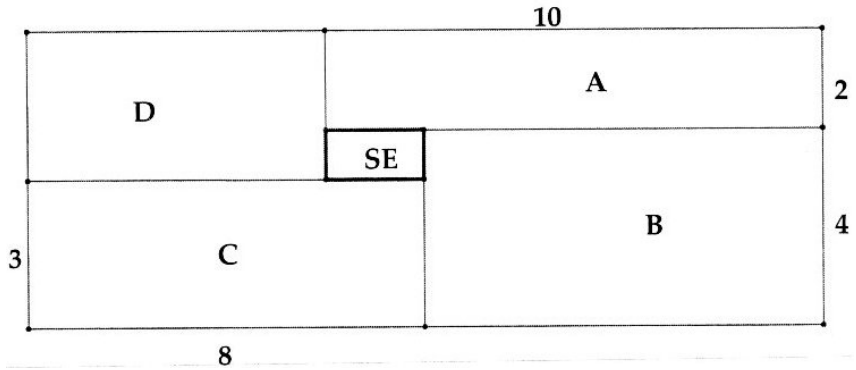
. . . . . .

293. The average algebra test score of a class of 25 students was 18 out of 20 possible points. If the teacher threw out the lowest score, the average score of the remaining 24 students would be 18.5. What was the lowest algebra score?

_____ points

. . . . . .

A rectangular dartboard with an area of 96 square units is divided into five sections (labeled A-D and SE) as shown below.




The probability of a dart randomly landing in any section is the same as the fraction obtained by dividing the area of that section by the area of the entire board.

Use the information to answer questions 294-296.

294. Find the probability of a dart randomly landing in section A. Write the answer as a fraction in simplest form.

_____

. . . . . .

295. Find the probability of a dart randomly landing in section B or in section C. Write the answer as a fraction in simplest form.

_____

. . . . . .

296. The section labeled SE is known as the "sheep's eye." Find the probability of a dart randomly landing on the sheep's eye. Write the answer as a fraction in simplest form.

_____

. . . . . .

The table shows the final grades of 40 students in a geometry class.

| Score | Frequency | Grade |
|---|---|---|
| Less than 60 | 4 | F |
| 60 to 69 | 6 | D |
| 70 to 79 | 10 | C |
| 80 to 89 | 12 | B |
| More than 89 | 8 | A |

Use the above information to answer questions 297-299.

297. What percent of the students obtained a grade of C or better?

_____ percent

298. A circle graph is drawn showing the information in the table. What is the measure of the central angle for the sector representing a grade of F?

_____ degrees

299. A bar graph is drawn showing the information in the table. If the area of the bar representing a grade of B is 36 units, what should be the area of the bar representing a grade of C?

_____ square units

. . . . . .

The list below shows 10 counting numbers arranged from smallest to largest. Note that three numbers are missing from the list and are represented by the letters X, Y and Z.

**X, 15, 16, 18, Y, 19, 20, 20, Z, 21**

Use the above information to answer questions 300-302.

300. The median of the 10 numbers is 18.5. Find the value of Y.

_____

301. The mode of the 10 numbers is 20. Find the mean of the four largest numbers.

_____

302. The mean of the ten numbers is 18.2. Find the sum **X + Y + Z**.

_____

. . . . . .

303. The magic square below is missing some if its entries. Each row, column, and diagonal of the magic square must have the same sum. What number goes in the square marked with an **X**?

| | | |
|---|---|---|
| 4.96 | 0.62 | 3.72 |
| 1.86 | | |
| | | **X** |

_____

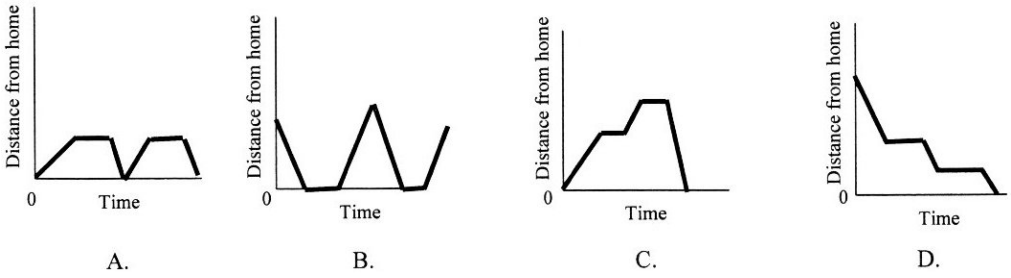
. . . . . .

304. A, E, I, O, and U are all vowels. What percent of the 22 letters in MATH MASTERS COMPETITION are vowels? Round your answer to the nearest percent.

_____ %

. . . . . .

305. Joan left home to go shopping. First she went to a hardware store and shopped for a while. Next she went to a grocery store farther from home and shopped for a while. Finally she returned home. Which of the graphs below depicts this situation best?

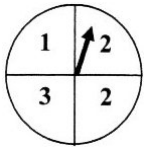



Write the letter of the correct choice on the blank to the right.

_____

. . . . . .

306. At the county fair, a player spins the spinner three times and all three numbers are added together. There is a different prize for each different sum. How many different prizes are possible?




Note: A spin does not count if it lands on a line.

_____ different prizes

. . . . . .

307. A farmer's wheat field is a rectangle $\frac{3}{4}$ mile long and $\frac{2}{3}$ mile wide. What is the area of this field in square miles(s)? Write your answer in decimal form.

_____ square mile(s)

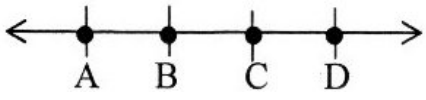
. . . . . .

308. Two angles are complementary if the sum of their measures is 90 degrees. Angles A and B are complementary. The measure of angle A is one-fifth the measure of angle B. Find the measure of angle A.

_____ degrees

. . . . . .

309. Assume points A, B, C, and D are evenly spaced on the number line.




The number at point A is 7.24 and the number at point D is 9.04. Find the number at point C.

_____

. . . . . .

310. Amanda wore a pedometer and recorded the number of steps she walked for 5 days. The results for the first 4 days are in the chart below.

| **Day** | **Number of Steps** |
|---|---|
| Monday | 9,205 |
| Tuesday | 7,980 |
| Wednesday | 4,237 |
| Thursday | 6,986 |
| Friday | ???? |

If Amanda averaged 7,500 steps per day for the 5 days, what was Amanda's average per day for Thursday and Friday?

_____ steps

. . . . . .