

621. Rectangle A is similar to rectangle B. The length of rectangle B is 3 times the length of rectangle A.



How many times larger is the area of rectangle B than the area of rectangle A?
 _____ times

622. Jeremy counted backwards from 1882, counting by nines. Which number below should Jeremy include in his count?

- A. 18 B. 19 C. 20 D. 29

623. Mary is standing exactly 11 feet in front of a fence. She decides to jump all the way to the fence.

Every time Mary jumps forward, she jumps a distance of 3 feet.

Every time Mary jumps backward, she jumps a distance of 1 foot.

Mary jumps forward, then backward, then forward, then backward ... continuing this pattern until she reaches the fence. What is the fewest number of jumps Mary will take to reach the fence?

_____ jumps

624. Mother placed 12 quarters in a row on the kitchen table.

Father replaced every second quarter with a dime.

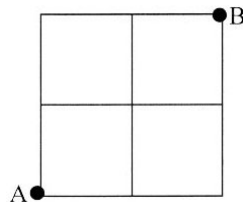
Then grandfather replaced every third coin with a nickel.

Finally, grandmother replaced every fourth coin with a penny.

What is the value of the 12 coins that are now in a row?

\$ _____

625. Ann's house is located at point A. Ben's house is located at point B. The lines in the picture represent sidewalks. Ann decides to walk to Ben's house using only the sidewalks. At each intersection, she walks either north (up) or east (right). How many different ways can Ann walk from her house to Ben's house?

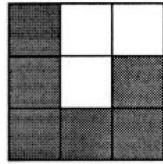


_____ ways

626. A list of numbers begins with 4, 8, and 15. Each number after that is the sum of the three previous numbers in the list. What is the first even number greater than 100 that is in this list?

4, 8, 15, 27, ...

627. The large square below is made up of six shaded and three unshaded squares, all the same size. The area of the large square is 441 square inches. What is the perimeter of the shaded region?



_____ inches

628. Father has two boxes. Box X is twice as long, one-third as wide, and three fourths as high as box Y. Which of the following statements is true?

- A. Box X has twice the volume of box Y.
- B. Box X has one-half the volume of box Y.
- C. Box X has two-thirds the volume of box Y.
- D. Box X has the same volume as box Y.

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

629. Lisa had 20 coins in nickels and dimes. The value of these coins was \$1.40. She spent \$0.65, using 10 coins. How many nickels did Lisa have left?

_____ nickels

630. Billy wrote down all of the two-digit square numbers. What fraction of these numbers are divisible by four? Write your answer in simplest form.

631. What percent of 3.5 hours is 6 minutes? Round your answer to the nearest percent.

_____ %

632. Given the list of five numbers below, LeBron decided to arrange the numbers from smallest to largest. Which of the five numbers should be the middle number in LeBron's list?

- $\frac{9}{25}$ $\sqrt{0.12}$ 12 0.353 $\frac{35}{99}$ $\frac{89}{250}$

633. I'm thinking of a two-digit number. It is divisible by both three and five. When I divide it by eight I get a remainder of three. What number am I thinking of?

634. Jake bought a new scooter that was on sale for 10% off the regular selling price. The sale price of the scooter was \$118.35. What was the regular selling price of the scooter?

\$ _____

635. Two numbers have a sum of 8.4 and a difference of 1.2. What is the product of the two numbers? Do not round your answer.

636. Jamie's family drove to Aunt Mary's house for Thanksgiving dinner. They planned to leave at 9:30 a.m., but started out 45 minutes late. They then drove the 100 miles at a constant rate of 60 miles per hour. At what time did they arrive at Aunt Mary's house?

637. Dante wrote a list of ten whole numbers.

48, 48, ____, ____, ____, ____, ____, ____, ____, 53, 53

Use the following clues to answer the question below.

- * Every whole number from 48 to 53 is in the list.
- * The **mode** of the ten numbers is 51.
- * The **median** of the ten numbers is 51.

What is the **mean** of the ten numbers in Dante's list?

200 persons were surveyed about their preferences among three television programs. The results are shown in the chart below.

	Program X	Program Y	Program Z	Total
Males	50	60	20	130
Females	25	15	30	70
Total	75	75	50	200

For example, the chart shows that 50 of the 130 males preferred Program X.

Use the information in the chart to answer questions 638-640.

638. How many persons did **not** prefer Program Y?

_____ persons

639. How many females preferred either Program Y or Program Z?

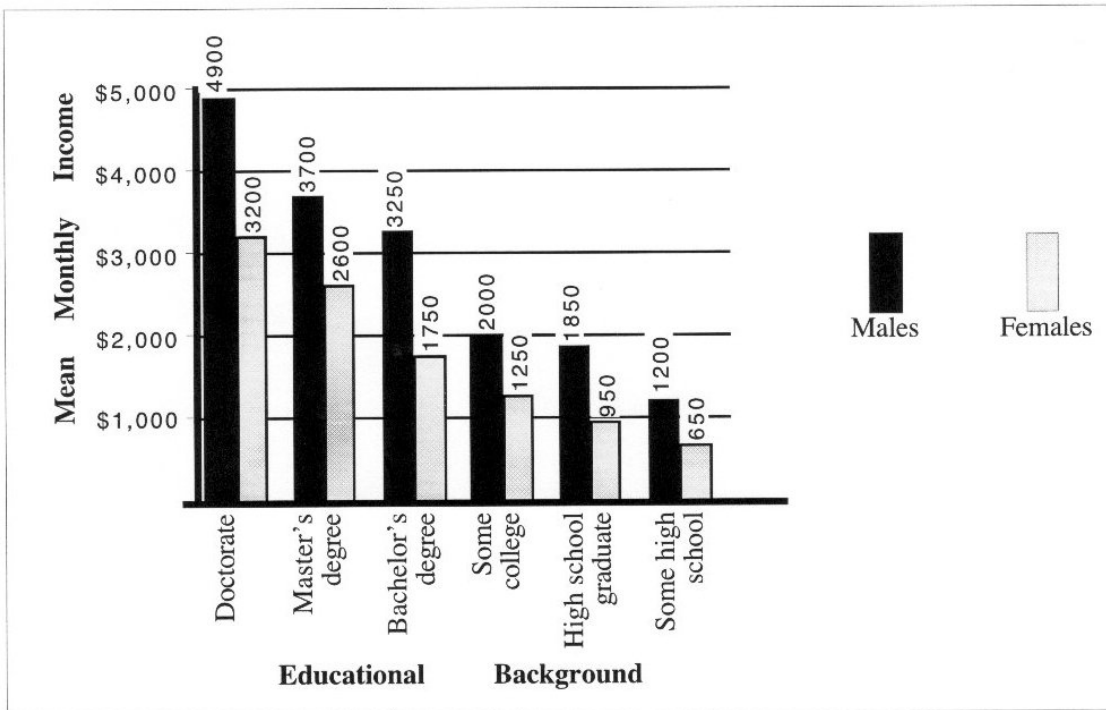
_____ females

640. One person is selected at random from the study. What is the probability that this person will prefer Program X? Write the answer as a fraction in simplest form.

641. Sundar averaged 88 points on her first five math quizzes. She scored 78 points on her sixth math quiz. What was her score on the seventh math quiz if her average score on the seven quizzes was 85 points?

_____ points

The graph below shows the mean monthly incomes of males and females based on their educational backgrounds.



For example, the graph shows that females with a master's degree had a mean monthly income of \$2,600.

Use the information in the graph to answer questions 642-644.

642. Within which educational category is there the greatest difference (in dollars) between male and female mean monthly incomes?

643. On the average, how much more per month did a male with a master's degree earn than a female with a doctorate?

\$ _____

644. Express the mean monthly income of a female high school graduate as a percent of the mean monthly income of a male high school graduate. Round the answer to the nearest hundredth of a percent.

_____ percent

645. Jerod's car used 14 gallons of gas on a road trip. The car averaged 28 miles per gallon. How many kilometers did the car travel on the road trip? Round your answer to the nearest kilometer. Use 1 kilometer = 0.621 miles.

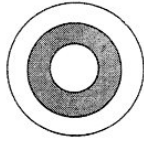
_____ kilometers

646. Mary wrote down her favorite counting number. First she tripled it. Then she added 24. Next she divided her answer by 6. Finally, she squared the result. Mary's final answer was 169. What is Mary's favorite counting number?

647. Find the missing number in the list below.

12, 0.5, 6, 3, 18, ?, 972

648. The diagram below has three circles. All three circles have the same center. The radii of the circles are 1 unit, 2 units, and 3 units. The combined area of the white regions of the diagram is approximately:



- A. 13 units²
- B. 19 units²
- C. 25 units²
- D. 28 units²

649. How many prime numbers between 1 and 60 have no remainder when divided by 2?

650. Jerry's father is 4 years more than three times as old as Jerry. Jerry's uncle, who is 40 years old, is 3 years older than Jerry's father. How old is Jerry?

_____ years

651. Mr. Adams graded a 10-question true-false quiz in the following manner.

- Each correct answer: +3 points
- Each wrong answer: -1 point
- Each question unanswered: 0 points

Jenny took the quiz and left 3 questions unanswered. Her score was 13. How many questions did Jenny answer correctly?

_____ questions

652. A chalkboard eraser is 5 inches long, 2 inches wide, and 1 inch high. The inside of a shoebox is 10.25 inches long, 6.25 inches wide, and 4.25 inches high. What is the greatest number of chalkboard erasers that will fit completely inside the shoebox?

_____ erasers

653. Pedro is thinking of a number. Six times Pedro's number is 10 more than twice Pedro's number. What number is two more than Pedro's number?

654. Mario drew a happy face on a piece of paper, as shown to the right. Next he rotated the paper 90° counterclockwise. Then he rotated the paper 270° clockwise. Finally, he rotated the paper 180° counterclockwise. Which of the following would be the final result?



- A.
- B.
- C.
- D.

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

.....
655. In the decimal multiplication problem below, A and B represent missing digits.

$$\begin{array}{r} 2.A \\ \times 3.B \\ \hline 9.00 \end{array}$$

Find the value of $A + B$. _____

.....
656. What fraction of $3\frac{1}{2}$ is $\frac{1}{3}$? Write your answer in simplest form.

.....
657. Anika bought candies at 8 for \$0.25 and sold them all at 2 for \$0.15. She made a profit of \$3.50. How many candies did Anika buy?

_____ candies

.....
658. Which one of the five numbers below is not the sum of two perfect square numbers?

- A. 61 B. 45 C. 42 D. 25 E. 13

.....
659. Jermaine was paid \$4.50 for each hour she spent working in her neighbor's yard. After Jermaine was paid, she bought a shirt that had a regular selling price of \$24.00. The shirt was on sale for 20% off the regular selling price and no sales tax was charged. After paying for the shirt, she had \$1.05 remaining from her yard work money. For how many hours did Jermaine work in her neighbor's yard?

_____ hours

.....
660. Mr. Jackson gave two candy bars to each trick-or-treater who came to his house on Halloween. Everyone received the same type of candy bar. The candy bars cost \$3.48 a dozen. Mr. Jackson calculated that he gave away \$43.50 worth of the bars on Halloween. How many trick-or-treaters came to Mr. Jackson's house on Halloween?

.....
661. Ann and Andy live exactly three miles from one another. They decide to walk toward each other's house and meet somewhere in between. Andy walks at a constant rate of 360 feet per minute. Ann walks at a constant rate of 5 feet per second. They begin walking at 2:00 p.m. At what time will Ann and Andy meet? Fact; 1 mile = 5280 feet

_____ p.m.

.....
662. Edgar makes a list of numbers. He wrote the first number, then increased it by 50% to get the second number. He decreased the second number by 50% to get the third number. Edgar continued to find the next number on his list by alternately increasing or decreasing the previous number by 50%. The first five numbers on Edgar's list are below.

- 200 300 150 225 112.5

Find the seventh number on Edgar's list. Do not round your answer.

663. Sharon, Betsy, and Amanda all ran in the spring marathon. The marathon began at noon. Amanda finished the marathon at 4:20 p.m. Sharon's time was 10% faster than Amanda's. Betsy's time was 5 minutes slower than Sharon's. At what time did Betsy finish the spring marathon?

_____ p.m.

664. Find the product of twenty percent of fifty-six and two-thirds of eighty-four.

The faces of a regular 6-sided die are labeled using each of the numbers 1, 2, 3, 4, 5, and 6. The faces of a second regular 6-sided die are labeled using each of the numbers 2, 4, 6, 8, 10, and 12. Sachin rolls the two dice once and then adds the numbers showing on the top face of each die.

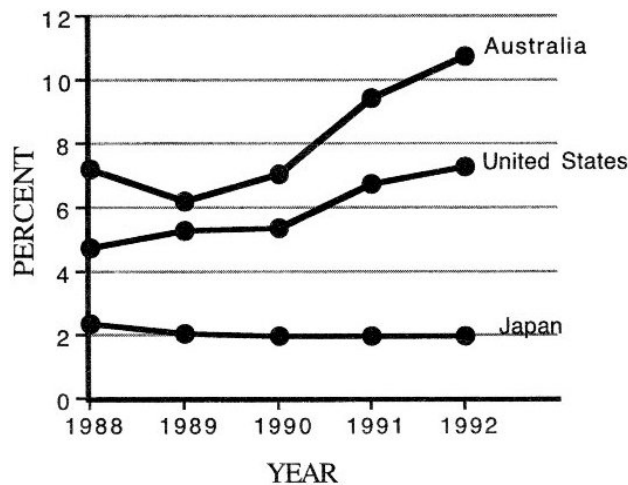
665. In how many ways is it possible for Sachin to obtain a sum of 10?

_____ ways

666. Find the probability that the sum of the two numbers showing on the top faces is a multiple of 4. Write the answer as a fraction in simplest form.

667. Find the probability that the sum of the two numbers showing on the top faces is a one-digit prime number. Write the answer as a fraction in simplest form.

The graph below shows the unemployment rates in Australia, the United States, and Japan in the years 1988 through 1992.



Use the information in the graph to answer questions 668 and 669.

668. Which country suffered the greatest increase in the unemployment rate over a single year?

669. Between which two consecutive years did the unemployment rates decline in two of the three countries?

Between _____ and _____

When a piece of iron is heated, it changes color from black to dull red, then bright red, bright orange, and finally a bright yellow-white. The chart below shows how much heat is radiated by the iron as its temperature increases.

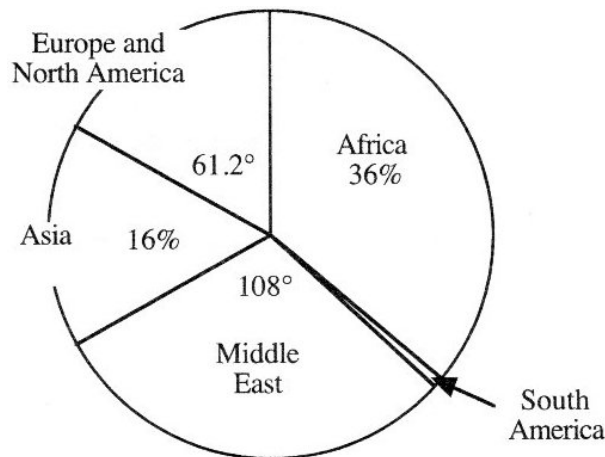
COLOR	TEMPERATURE in thousands of degrees Kelvin	HEAT RADIATED in thousands of calories per minute
Black	1	1
Dull Red	2	16
Bright Red	3	81
Bright Orange	4	256
Bright Yellow-white	5	625

Use the information presented in the chart to answer questions 670 and 671.

670. By what factor does the radiated heat change when the temperature is doubled?

671. Assume that the surface of the sun is 6000 degrees Kelvin. If a piece of iron were that hot, how much heat (in thousands of calories per minute) would it radiate?
_____ thousand calories per minute

The circle graph below shows the distribution of refugees around the world.



Use the information in the circle graph to answer questions 672 - 674.

672. What percent of the world's refugees are in the Middle East?
_____ percent

673. What is the degree measure of the central angle for the sector labeled Asia?
_____ degrees

674. A refugee is selected at random from the entire set of the world's refugees. What is the probability that he/she is in South America? Write the answer as a fraction in simplest form.

675. Myron measured the lengths (in cm) of the sides of a rectangle. He found that the lengths of all of the sides were counting numbers. He also found that the perimeter was 44 cm. What is the largest possible value for the area of the rectangle?

_____ cm²

676. Jasmine noted that the time is exactly 5 o'clock. What is the measure of the smaller angle formed by the hour and minute hands of the clock?



_____ degrees

677. Jake wrote down all of the counting numbers that are factors of 24. What percent of these numbers are also factors of 36?

_____ %

678. Nick's grandpa told Nick that he is going to flip a fair coin three times. If all three flips show heads or all show tails, Nick's grandpa will owe him one dollar. What is the probability that Nick will be owed the dollar? Write your answer as a fraction in simplest form.

679. Three different counting numbers are arranged in order from smallest to largest. The median of the three numbers is 45. The difference of the largest and smallest number is 13. What is the largest possible sum of the three numbers?

680. Jenny looks at her digital clock and sees that the time is 4:56 p.m. She notes that the numbers 4, 5, and 6 are increasing consecutive digits. How much time will pass before her digital clock next shows three increasing consecutive digits?

_____ hours _____ minutes

681. Twin primes are prime numbers that have a difference of two. Three and five are the first pair of twin primes. They have a sum of eight. Five and seven are the second pair of twin primes. They have a sum of twelve. Find the sum of the third pair of twin primes.

682. Uncle Bill bought firewood for his woodstove. The wood was placed in the shape of a rectangular prism that measured four feet wide, eight feet long, and five feet high. Firewood costs \$0.50 per cubic foot. How much did Uncle Bill pay for his firewood?

\$ _____