

Target:

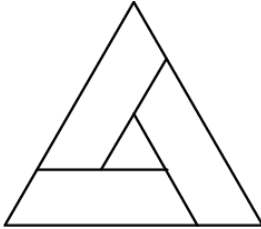
1. The hens laid 46 eggs. Then they laid 4 more eggs. Farmer Bing wanted to divide the eggs equally into 5 boxes. How many eggs did he put in each box?
Answer: 10
2. What is the smallest positive integer with 8 factors?
Answer: 24
3. The 6-digit numeral 8AA3A1 is divisible by 11. What digit does A represent?
Answer: 7
4. What is the measure of each internal angle in a regular dodecagon (12 sided-polygon)?
Answer: 150
5. Emily has 21 dimes. She places them in three piles, with an odd number of dimes in each pile. In how many different ways can she accomplish this? [Consider piles of 1,1, and 19 dimes, for example, to be equivalent to piles of 1, 19 and 1 dimes.]
Answer: 12
6. Jay lives at the coordinates (0,0) and his school is at (3,2), how many possible routes can Jay take to go to school if he can only walk up or right along the gridlines?
Answer: 10
7. Tracy's Trophies charges by the letter for engraving. There is one fee for each vowel and a different fee for each consonant. CAROL costs \$31 to engrave and GABRIEL costs \$43 to engrave. How many dollars does BRIDGET cost to engrave?
Answer: 45 dollars
8. Two boys and six girls are seated randomly in 8 chairs around a circular table. Express as a fraction, in lowest terms, the probability that the two boys are seated next to each other.
Answer: $\frac{2}{7}$

Sprint:

1. Evaluate the following expression. $\sqrt{5 + \sqrt{7 + 9}}$
Answer: 3



2. In the figure, the outer equilateral triangle has area 22, the inner equilateral triangle has area 4, and the three trapezoids are congruent. What is the area of one of the trapezoids?



Answer: 6

3. What is the largest multiple of 13 that is less than 500?
Answer: 494
4. When I open my textbook, two pages face me and the sum of the two page numbers is 823. What is the number of the very next page?
Answer: 413
5. I have four 3¢-stamps and three 5¢ stamps. Using one or more of these stamps, how many different amounts of postage can I make?
Answer: 19
6. In the list of numbers 5, 8, 11, 14, ... , each number is 3 more than the number before it. What is the first number in the list that is greater than 100?
Answer: 101
7. There exists 6 consecutive integers that add up to 255. What is the smallest of these 6 integers?
Answer: 40
8. Akira began work at 8:37 AM. He finished at 4:32 PM. How long did Akira work, in hours and minutes?
Answer: 7 hours 55 mins
9. If 30 is added to one-fourth of a number, the result is two-thirds of the number. What is the number?
Answer: 72



10. What fraction of four days is 600 minutes?

Answer: $\frac{5}{48}$

11. Jenny took four math tests this year. On those tests, she scored 84, 86, 89, and 95 points. How many points must she get on her final test in order to have a final average of 90 points?

Answer: 96

12. Bob is making a doghouse and has a piece of lumber that is 84 inches long. He divides it into 2 and the long piece is 3 times longer than the short piece. How long, in inches, is the long piece?

Answer: 63

13. Jenny walked her dog 4 blocks west and 3 blocks north to get to her grandmother's house. Then, they walked 5 blocks east and 2 blocks south to the library. How far will they have to walk to get back home assuming Jenny can only walk in the direction of west, east, south or north?

Answer: 2 blocks

14. Kendra is twice as old as Tim. In 10 years, Kendra will be four years older than Tim. How old is Kendra now in years?

Answer: 8 years old

15. The cold water faucet of a bath tube can fill the tub in 10 minutes. The drain, when opened, can empty the tub in 15 minutes. Suppose the tub is a third full and the faucet and drain are both opened at the same time. How many minutes will it take to fill the tub?

Answer: 20 minutes

16. A fair coin is flipped 5 times. What is the probability that the coin will land on heads more times than tails?

Answer: $\frac{1}{2}$

17. The extended fraction below can be expressed as $\frac{m}{n}$ where m and n are relatively prime to each other (they do not share any common factors). What is the value of $m+n$?

$$3 + \frac{1}{3 + \frac{1}{3 + \frac{1}{3}}}$$

Answer: 142

18. Katherine and Vivian are running in an 800-meter race. Katherine runs at a pace of 4 meters per second while Vivian runs at a pace of 5 meters per second. How many seconds will Vivian finish the race before Katherine?

Answer: 40

19. Alexandra is working on a project for school. She begins working at 8:30 AM and works for 160 minutes. She then takes a 30 minute break to eat lunch. She then spends 2 more hours working on the project after. At what time did Alexandra finish her project?
(Include AM/PM)

Answer: 1:40 PM

20. A hot dog has about $\frac{1}{4}$ the amount of protein as 3 ounces of hamburger. Together, they have about 25 grams of protein. How many grams of protein are in a 3-oz. Hamburger?

Answer: 20

21. Suppose two days before yesterday was Friday. What day of the week will it be 100 days from today?

Answer: Wednesday

22. What number multiplied by itself is equal to the product of 32 and 162?

Answer: 72

23. In Summer's farm, she has chickens with 2 legs and pigs with 4 legs. If there are 17 heads and 50 legs, how many chickens are there?

Answer: 9

24. One hundred students took a survey about their favorite subjects. They could choose math, english, both, or neither. 68 students like math, 47 like english, and 4 like neither. How many students like both subjects?

Answer: 19

25. A bowl of marbles has 10 red marbles, 12 white marbles, and 3 blue marbles, all of the same size. Suppose I am blindfolded when I pick marbles from the bowl. What is the least number of marbles I must pick in order to be absolutely certain that there are three marbles of the same color among those I have picked?

Answer: 7



26. In a group of 5 children, the average weight of each child was 68 pounds. When a sixth child joined the group, the average weight of each child became 70 pounds. What was the weight of the sixth child in pounds?
Answer: 80
27. What is the area of the largest circle that can fit in a 4x6 rectangle? Write your answer in terms of π .
Answer: 4π
28. Wendy has a jar with 6 jelly beans and 10 M&Ms. If she randomly chooses 2 pieces of candy without replacement, what is the probability that she will get 1 of each candy?
Answer: $1/2$
29. A palindrome is a number that reads the same left to right and right to left. How many three-digit palindromes are there?
Answer: 90
30. A motorist is making a 95 mile trip to visit his best friend. During the first 50 miles of his trip, he averaged 25 miles per hour. However, because of traffic, he averaged 15 miles per hour for the rest of his trip. In miles per hour, what was the motorist's average speed for the entire trip?
Answer: 19
31. $PQ \times QP = 2701$, where P and Q represent 2 different digits. Find both 2-digit numbers, PQ and QP.
Answer: 37 and 73
32. The product of two positive numbers is 144 and their difference is 10. What is the sum of the two numbers?
Answer: 26
33. Mrs. Sharpe is organizing her desks into rows. If she puts five chairs in each row, there will be three left over. If she puts six chairs in each row, there will be five left over. Mrs. Sharpe has less than thirty students in her class. How many students are in her class?
Answer: 23

34. Kimberly is eating out at a restaurant. For the appetizer, there are six options. For the main course, there are ten options. Lastly, there are four options for dessert. How many possible meal combinations can Kimberly choose from?
Answer: 240
35. John and Ben each want to buy the same kind of notebook. But John is 26¢ short and Ben is 5¢ short. When they combine their money, they still do not have enough money. In cents, what is the most the ruler could cost? (AL)
Answer: 30¢
36. A book has 400 pages numbered 1,2,3, and so on. How many times does the digit 3 appear in the page numbers?
Answer: 180
37. 6, 15, and 22 are factors of the counting number N. What is the smallest value that N can have?
Answer: 330
38. Find the units digit of $19^{2022} + 26^{2022}$.
Answer: 7
39. If $\frac{1}{5} = \frac{1}{A} + \frac{1}{B}$ where A and B are distinct positive whole numbers, find the value of A+B.
Answer: 36
40. A fast clock gains two minutes per hour and a slow clock loses three minutes per hour. At a certain time, both clocks are set to the correct time. Less than 24 hours later, the fast clock registers 9:00 PM at the same moment that the slow clock registers 8:00 PM. What is the correct time at that moment? (Include AM/PM)
Answer: 8:36 PM