

1) $2(1+\frac{1}{2}) + 3(1+\frac{1}{3}) + 4(1+\frac{1}{4}) \dots$
 $+9(1+\frac{1}{9}) + 10(1+\frac{1}{10})$

- 2) Ben stacks 144 cans total. One on the top row, then every row below has two more cans than the previous row. How many rows does he stack?
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3) $\sqrt{75} - \sqrt{48} + \sqrt{27}$

- 4) If the tens digit and the hundreds digit of a two-digit number are switched it becomes less than the original. If it is subtracted from the original, the one's digit will be 6. How many numbers have this property?
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- 5) There are 120 students in "BCA GOT TALENT" night. All of the 120 students can either act, dance, or sing, but none has all 3 talents. There are 60 students who cannot act, 47 that can't sing, and 68 that cannot dance. How many students have 2 talents?
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- 6) How many numbers are there from 1000 to 10000 that read the same way forwards and backwards?
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- 7) 2, 6, 12, 20, 30, 42
What is the 101st term in the sequence?
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- 8) What is the number of 3 digit integers in which the product of the digits is 48?
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- 9) What is the sum of the digits of the product of
 $2^{1200} \times 4^{801} \times 8^{400} \times$
 $5^{1201} \times 25^{800} \times 125^{401}$
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- 10) Everybody must take at least two languages: Spanish, Latin, German, and French. 57 take Spanish, 17 take Latin, 33 take German, and 49 take French. Ten students take languages and the rest take 2. How many students are in all 4?

11) $2^{200} + 4^{100} + 6 (8^{68} / 4^2)$

12) $2^{200} + 4^{100} + 6 (8^{68} / 4^2)$

13) If 30% of p is 50 and 20% of 1 is 40,
what is 60% of pq?

14) There are single women and
married couples at a party. The
probability of selecting a single
woman from all is $\frac{2}{7}$. What is the
probability of selecting a married
man from all?

15) The product of the sum and
difference of two numbers is 24.
What is the difference of the squared
values of the two numbers?

16) The sum of consecutive positive integers from 1 to N is less than or equal to 300. What is the greatest possible value of N to make this true?

17) The product of three consecutive numbers is equal to 16 times the sum of the numbers. What is the sum of their squares?

18) Julia went to a local flower shop to buy a rose bouquet. She carried three different color roses only; white, red, and pink. How many different ways were there to make a bouquet with 4 roses?

19) During a folk dance performance, one dancer slaps one high five with each of the other dancers. The total number of high fives slapped during the performance is 120. How many dancers are in the performance?

20) How many positive integers less than 1001 can you create without using 4, 5, or 9 as digits?

21) 5 chips: 3 red and 2 white, and placed in a row. What is the probability that the last one placed in the row is white?

22) Mickey Mouse is 4cm taller than Mini Mouse. Mini Mouse is 3cm shorter than Donald Duck. Donald Duck is 1 meter tall. How tall is Mini Mouse in centimeters?

23) One dozen pencils cost \$3.72. It is \$1.08 cheaper than buying 12 pencils one-by-one. How much do you pay to buy 1 pencil in cents?

24) On Tuesday, a girl had \$12 more than she had on Monday. On Wednesday, she had \$15 more than she had on Tuesday, and the amount was 4 times the amount she had on Monday. How much did she have on Tuesday?

25) Mike's car averages 24 miles per gallon on the highway and 18 miles per gallon in the city. He spends 80% of the distance on the highway. Mike drove 4500 miles. What is the average miles per gallon?

26) The Academies is a lacrosse league of 6 teams. Each team plays each other team twice. The 5 teams won 0%, 30%, 50%, 60%, and 80% of their games. How many games did the Academies win?

27) Each of two boys, Al and Bob, and 2 girls Carol and Dee, is given a card numbered 1 through 4, inclusive. What is the probability that the sum of the numbered cards of the boys is even?

28) The number of women outnumbered men by 16. Seven times the number of women exceeds 9 times the number of men by 3. How many men are there?

29) What is the 100th number?

0, 2, 6, 12, 20, 30, 42...

30) In a women's club, each woman has at most 2 children and none of them have 2 of the same gender. If 25 women have 1 child only, and there are 32 boys and 37 girls in total, how many women have 1 boy and 1 girl?

31) A cleaning lady does laundry every 5 days and cleans the dishes every 7 days. In 315 days, how many times does she do the laundry and cleans the dishes on the same day?

32) All the cookies on a tray are either chocolate coated, cinnamon coated, or both. The ratio of chocolate coated to not is 3:1. The ratio of cinnamon coated to not is 2:3. Six are both chocolate and cinnamon coated. How many cookies are on the tray?

33) How many 3-digit numbers are there whose first digit is even, second digit can be any number, and the third digit is odd?

34) 1, 5, 6

In the sequence above, each term after the first two are formed by adding the previous two terms. Of the first 100 numbers in the sequence, how many are odd?

35) What is the next number?
11, 19, 35, 67...

36) Susan adds 4 gallons of 30% sugar solution to 8 gallons of 45% sugar solution. What is the percent concentration of the sugar conc