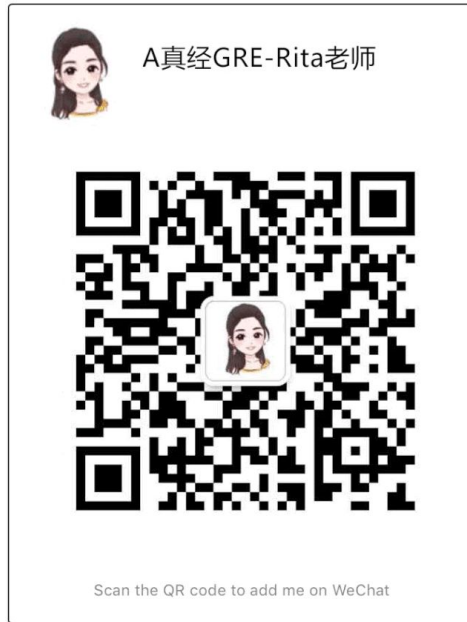


Analysis of Mathematics Machine Recall Edition Answers

Teacher Zhang Wei GRE Teacher Zhang Wei GRE 2/17

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example 1

Answer: Can't compare the size

Analysis: median is 100, so you can infer $y = 100$, so you can only know that $x < 100$, which cannot be compared with 90.

Example 2

Answer: 36

Analysis: The maximum value of $x + y + z$ is $54 + 56 + 58 = 168$, and the minimum value of $x + y + z$ is $42 + 44 + 46 = 132$, so the range is 36.

Example 3:

Answer: The quarter root number $3 \cdot r^2$

Analysis: draw a picture to see that this triangle is an equilateral triangle, the side length is r , so the area is a quarter of the root number $3 \cdot r^2$

Example 4

Answer: A

Analysis: The original number is expressed as $x \cdot 5 \cdot 7 \cdot 11$, and then divided by 7 = 55k. Since k is a prime number, it can only be 110.

Example 5

Answer: equal

Analysis: Because k and n are positive even numbers, so $k + n$ is positive even numbers, and the n th power of k is also positive even numbers, so the remainders divided by 2 are 0.

Example 6

Answer: BC

Analysis: The idea of this question is to ask how many squares of 1.2 are between 2 and 2.5, and the answer can be 4 and 5 according to the calculator.

Example 7

Answer: 144/221

Analysis: 20 weeks later is 141, Saturday to Tuesday plus 3, so it is 144/221.

Example 8

Answer: 13, 17

Analysis: The title of the original title should limit a and b are positive integers, so $12^2 + 1^2 = 145$, $8^2 + 9^2 = 145$, so the answer may be 13 and 17.

Example 10

Answer: 5/6

Analysis: $(r + s) / rs = 1 / s + 1 / r$, so when r and s are the smallest, the overall is the largest, so take $r = 2$, $s = 3$, so the answer is 5/6.

Example 11:

Answer: 7.5 minutes

Analysis: The efficiency of A is 1/12 of water per minute, and the efficiency of B is 1/20 of water per minute, so the algorithm of watering together is $1 / (1/12 + 1/20) = 7.5$ minutes.

Example 12

Answer: radicals 7 to 5 (exclusive)

Analysis: If 3 and 4 are the shorter two sides, then the longest side cannot exceed 5 according to the Pythagorean theorem. If 4 is the longest edge, then the shortest edge calculated based on the Pythagorean theorem cannot be less than the root number 7.

Example 13

Answer: 20000

Analysis: Because the number of chairs is 6 times that of the table, and the weight of the table is 9 times that of the chair, the total weight of the chair is two-thirds of the total weight of the table, so the total weight of the chair is 8000, so the total weight of the chair and table is 20,000 .

Example 14:

Answer: ABC

Analysis: Because $x > 2$, so $2x > x + 2$, so the order of the three numbers from small to large is $x, x + 2, 2x$. Knowing the arithmetic mean means knowing the sum of three numbers, you can calculate x . Knowing the median means knowing $x + 2$, so x can be calculated. If you know range, you know the value of $2x - x$, so you can calculate x , so the answer is ABC.

Example 15

Answer: 1601

Analysis: Because x is a positive integer, the left and right sides of the inequality are divided by x at the same time, and then the left and right sides are multiplied by $200n$ at the same time to derive $n > 1600$, so the smallest possible value of n is 1601.

Example 17

Answer: 5, 6, 7 are possible

Analysis: Suppose there are x 2 US dollars products and y 3 US dollars products, then $2x + 3y = 15$, and then match it, there should be (3, 3), (0, 5), (6, 1) These three situations.

Example 18 (The earliest version recalls a bit of a problem, the current version is the correct form: 15 numbers, 8 are larger than 50.4, 8 are smaller than 54.6, ask the relationship between the median and 52.5 size.)

Answer: Unable to determine size relationship

Analysis: The median is the eighth number, so it can only be determined that this number is between 50.4 and 54.6, and how much cannot be determined.

Example 19

Answer: 57

There are 33 multiples of 1: 1-100, 14 multiples of 7, and 4 common multiples of 3 and 7, so the answer is $100 - (33 + 14 - 4) = 57$.

Analysis 2: This question can also list multiples of 3 and 7: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60, 63, 66, 69, 72, 75, 78, 81, 84, 87, 90, 93, 96, 99, 7, 14, 28, 35, 49, 56, 70, 77, 91, 98 is a total of 43 numbers, so there are 57 numbers that are neither a multiple of 3 nor a multiple of 7. [Wei brother friendship tips: I hope you don't use the second method when you take the exam]

Example 20

Answer: Big 12

Analysis: Calculate $x = 1/9$ first, so the calculation can be calculated to be 12 larger.

Example 21

Answer: 20

Analysis: first find the number of the set is {11, 13, 15, 17, 19, 21, 23, 25, 27, 29}, the average number of this set is 20.

Example 22

Answer: $25\pi / 4 - 25 / 2$

Analysis: The shaded area can be regarded as the area of a fan with a 90° center angle minus a triangle. The area of the fan is $25\pi / 4$ and the area of the triangle is $25/2$.

Example 23

Answer: 49000

Analysis: Suppose the charity needs to raise x yuan, then there are $9000 + 3000 + (x-9000) + 0.4(x-9000) = 68000$, so the solution is $x = 49000$.

Example 24

Answer: 5 people

Analysis: This can only be 3 boys and 2 girls, so a total of 5 people.

Example 25

Answer: 31.04%

Analysis: $(1 + 17\%) \cdot (1 + 12\%) = 1.3104$.

Example 26

Answer: $3/4$

A efficiency: $1 / T$ (that is, $1 / T$ workload per hour)

B efficiency: $1 / (3T)$

Time spent together: $1 / (1 / T + 1 / (3T)) = (3/4) T$

Example 27

Answer: 12

$a + b + c + 8 = 11 \cdot 4 = 44$

So $a + b + c = 36$, so the average of a, b, c is $36/3 = 12$

Example 28

Answer: 2

Analysis: Drawing can infer that the base of this triangle is 2 and the height is 2, so the area is also 2.

Example 29

Answer: 99/100

Analysis: $(1 + 1/101) \cdot (1 - 1/102) = 1$, $(1 + 1/103) \cdot (1 - 1/104) = 1$, so the result is $(1 - 1/100) = 99/100$

Example 30

Answer: 60

$(xy)^2$ is the largest case: $x = 4, y = 12$, then $(xy)^2 = 64$

$(xy)^2$ is the smallest case: $x = 6, y = 8$, then $(xy)^2 = 4$

So the range of $(xy)^2$ is $64-4 = 60$

Example 31

Answer: (2 times root number 5, root number 5)

Write the equation. The straight line equation is $y = 0.5x$. After the equations are connected, find the coordinates of the intersection point (2 times the root number 5, root number 5)

Example 32

Answer: 3

Analysis: $(ab)^2 + (2-6)^2 = 5^2 = 25$, so $(ab)^2 = 9$, so $|ab| = 3$.

Example 33

Answer: The remainder is 0

Analyze the square of $N = 7m$, so N must be a multiple of 7, so the balance divided by 7 is 0, $0 < 1$

Example 34

Answer: 15

Analysis: Suppose that you have to test x times, $(75 * 10 + 100x) / (10 + x) > 90$

After solving x , $x > 15$

So x is at least 15

Example 35

Answer: 2, 4

Analysis: As long as even-even is equal to f , or odd-odd is equal to f

These 5 kinds, 5 even, 3 even, 1 even, 0 even can

Example 36

Answer: A

Analysis: The first formula: $2-2 * 3 = -4$, $1-2 * (-4) = 9$

The second formula: $1-2 * 2 = -3$, $-(-3) - 2 * 3 = -3$

So A big

Example 37

Answer: B

Analysis: the original formula = $(2^n / 3^n)^2 < 1$

Example 38

Answer: 3

Analysis: Record this number as N^2

$N^2 = M^3$, so let $N = K^3$, then $M = K^2$, so the number that satisfies the condition is $N^2 = K^6$, $K = 1, 2, 3 \dots$

In 1-2000, K can be taken 3 in total ($K = 1, 2, 3$)

Example 45

10th to 11th power

The original formula is approximately equal to $7 * 10^5 * 9 * 10^4 = 63 * 10^9 = 6.3 * 10^{10}$

Example 46

Answer: 5328

All three digits 789,798,879,897,987,978

Sum = $700 * 2 + 800 * 2 + 900 * 2 + (80 + 90 + 70) * 2 + (8 + 9 + 7) * 2 = 5328$

Example 47

Answer: D

Just the square of (root x x y) is compared to x + y

xy? (x + y), the size cannot be determined. When x = 2, y = 2, the two are equal; when x = 3, y = 1, the latter is larger. Therefore, the size cannot be compared

Example 48

Answer: C

$a_6 = 0.2^4$,

$A_6 / 25^{-3} (0.2)^{10} = .5^{-6} / 25^{-3} = .1$

Example 49

Answer: C

After shifting three units to the right, the expression is $y = (x-3)^2$, bringing in four points, and C is on a straight line

Example 50

Answer: C

12 is even, so $a = (1/37)^{12} = (37^{-1})^{12} = 37^{-12}$, so choose C

Example 51

Answer: A

$52 = 36 + 16$, and $x > y$, so $x = 6$, so $x > 4$

Example 52

Answer: D

$6 / x$ is compared with $11x / 6$, and the two are divided. $(6 / x) / (11x / 6) = 36 / (11x^2)$

Because $1 < x < 2$, the size of $36 / (11x^2)$ and 1 is uncertain, so the size of two numbers is uncertain.

Example 53

According to the consideration of various situations, it can be seen that the intersection situation is 0,1,2,3,4,5,6

Example 54

Answer: 7/27 bigger

Analysis: Numbers divisible by 4 must require tens and ones to be divisible by 4, so the last two digits can only be 12 or 72, so we can enumerate the numbers that meet this condition

112,212,712,172,272 , 772, and three numbers can be reused to form a total of 27 numbers, so the probability is calculated to be 6/27.

Example 55:

Answer: AB

Analysis: Assume that there are n red and green balls, so the probability of the first being a green ball is $n / 2n = 1/2$, so A is right. The second is that the green ball should be divided into two cases: red + green and green + green. The probability of red + green = $1/2 \cdot (n / 2n-1)$, the probability of green + green = $1/2 \cdot (n-1 / 2n-1)$, so the total probability is $1/2$, so B right. Option C is also divided into two cases: green + red and red + green, green + red probability = $1/2 \cdot (n / 2n-1)$, red + green probability = $1/2 \cdot (n / 2n-1)$, So the C options do not add up to $1/2$, so the C option is wrong.

Example 56

Answer: 30

1 male and 3 female: $2 * C_5^3 = 20$

2 men and 2 women: $1 * C_5^2 = 10$

$20 + 10 = 30$ kinds

Example 57

Answer: 15

There are 3 kinds of single digits, and there are 5 kinds of choices in the case of single digits.

$3 * 5 = 15$ kinds

Example 58

Answer: 10 types

First select 2 people from 4 people to the double room, except for the case where AB is together.

In the case of two single rooms, there are two types of division methods, a total of $2 * 5 = 10$ types.

Example 59

Answer: ACE

The sequence is 1,2,3,5,8,13,21,34.

Example 60

Answer: 9

181 , 272 , 363 , 454 , 545 , 636 , 727 , 818 , 999

9 types in total

Example 61

Answer: C

8 to 44 even variance is equal to 0 , 2 , 4 , ... 36 variance

23 to 59 odd variances are equal to 0 , 2 , 4 , ... 36 variances

The variance is equal

Example 62

Answer: $2 / (50 * 49)$

Example 63

Answer: 8

Drawing, 8 people like both

Example 64

Answer: 30 people

Example 65

Answer: 45 to 48.6 people

The interval length of both is 3 , but according to the image characteristics of the normal distribution, the closer to the average interval, the larger the probability area, so 45 to 48.6 more people

Example 66

Answer: $1/2$

$(10/16) * (6/15) + (6/16) * (10/15) = 1/2$

Example 67

Answer: $7/10$

The probability of drawing all the gifts is $3/5 * 2/4$

So the probability of getting cash at least once is $1 - 3 / 5 * 2/4 = 7/10$

Example 68

Answer: 18.06

Analysis: Remember one corollary: if the standard deviation of some numbers is x , then change these numbers to a times the previous, then the standard deviation is ax . Using this inference, the price per bottle is 12.04 times the number of bottles, so the standard deviation is 12.04 times the number, so the answer is $12.04 \times 1.5 = 18.06$.

Example 69

Answer: 48

Analysis: $(A3, 3) \times 2^3 = 48$ kinds

Example 70

Answer: 9

Analysis: the sum of the minimum values: 7. Maximum value of the sum: 15

Every number in the interval can be taken, so there are $15 - 7 + 1 = 9$ types

Example 71

Answer: $1/2$

Analysis: 1-5 is exactly half

Example 72

Answer: 0.3

Analysis: head up + head down = 1

Face up / face down = $\frac{3}{7}$

So face up = 0.3

Example 73

Answer: 60

Analysis: $162 - 102 = 60$

Example 74

Answer: 20

Analysis: All with 5 packages Price: 79 USD

The cheapest package price: 19 " 20 packages", 1 " 12 packages", total $19 * 3 + 1 * 2 = 59$ dollars

So expensive $79 - 59 = 20$ dollars [WeChat public account : Teacher Zhang Wei GRE]

Example 75

Answer: 75

Analysis: A number that is divisible by 3 and 4 at the same time is a number that is divisible by 12.

The smallest is 108, the largest is 996, and $(996 - 108) / 12 + 1 = 75$ numbers in the middle.

Example 76

Answer: 720

Analysis: A chooses first, there are 3 choices, B chooses again, there are 2 choices, and then 5 people are left in full row, so the answer is $3 \cdot 2 \cdot A(5,5) = 720$

Example 77

Answer: 1

Analysis: The rule of the single digits of the power exponent of 9 is 9,1,9,1,9,1, so the single digit of 9^{78} is 1, so the remainder divided by 5 is 1.

Example 78

Answer: $\frac{3}{7}$

Analysis: $160 + 80 + 60 - 210 = 90$, so the ratio is $\frac{3}{7}$.

Example 79

Answer: c big

Analysis: bring $x = 3$ into the equation to get $a = -1$, and then bring $a = -1$ into the equation to get $c = 2$, so c is large.

Example 80

Answer: $\frac{4}{9}$

Analysis: This is very simple. The tens digits are even, and there are 2, 4, 6, 8, and the tens digits are odd. Accounts for $\frac{4}{9}$.

Example 81

Answer: as big

Analysis: $20! + 19! + 18! = 18! (19 \cdot 20 + 19 + 1) = 400 \cdot 18!$, so it is the same size.

Example 82

Answer: equal

Analysis: The probability of drawing the red ball three times = $\frac{6}{7}$ times $\frac{5}{6}$ times $\frac{1}{5} = \frac{1}{7}$, the probability of drawing the red ball four times = $\frac{6}{7}$ times $\frac{5}{6}$ times $\frac{4}{5}$ Multiply by $\frac{1}{4} = \frac{1}{7}$.

Example 83

Answer: 6 types

Analysis: The ball can be divided into two cases of 221 and 113, of which 221 is 3 ways, 113 is also 3 ways, so there are 6 ways in total.

Example 84

Answer: $\frac{5}{14}$

Analysis: The denominator is to choose 2 out of 8 people, $C(2, 8) = 28$, and the numerator is to choose 2 out of 5 people, $C(2, 5) = 10$, so the answer is $\frac{5}{14}$. (Note that this question does not require everyone to consider who is the monitor and who is the vice monitor, so you do not need to multiply by 2)

Example 85

Answer: Not sure about size

Analysis: N can be equal to 0 or 3, and K is taken as 0, the size cannot be compared.

Example 86

Answer: 0.6

Analysis: Draw the following picture based on the method of double overlapping topics taught by Wei Ge in the class, so it can be derived that $y + 0.35 = x$, $y + 0.15 = 1 - x$, so $x = 0.6$, $y = 0.25$.

	mathematics	Non-mathematics	Summary
Boys	0.35	y	x
Schoolgirl	y	0.15	1-x
Summary	x	1-x	

Example 87

Answer: 23

Analysis: $4.6 \times 5 = 23$. Note that this kind of question is only multiplied by the coefficient, and the latter constant term is not needed. This question can be analyzed together with the previous example 68, and there will be gains!

Example 88

Answer: 200

Analysis: Because the single digit was larger than 2 before, the single digit is smaller than the original after the replacement, so the difference is less than 200. Or you can take values, such as 103 and 301, and you can watch them straight away.

Example 89

Answer: 480

Analysis: According to the exclusion and exclusion principle and the Wayne diagram, it can be concluded that the probability of neither crack nor b event is $1 - (1/2 + 2/3 - 1/3) = 1/6$, so the total plate is $80 \div 1/6 = 480$.

Example 90

Answer: 9

Analysis: Three people attended a total of 21 days, and only three people attended one day. Therefore, among the remaining 9 days, the number of days attended by the three people was 5, 6, 7 days. There are a total of 18 days of courses, with 9 days left, so the remaining 9 days must be attended by two people every day, otherwise the 18 days of courses cannot be consumed. (WeChat public account: Teacher Zhang Wei GRE)

Example 91

Answer: The latter is large

Analysis: The sum of the four internal angles of the square is 360° , and each of the internal angles of the regular pentagon is greater than 90° , so the sum of the four internal angles is greater than 360° .

Example 92

Answer: ABD

Analysis: The single-digit cycle of the exponent of 7 is 7, 9, 3, 1. The single-digit cycle of the exponent of 9 is 9, 1, 9, 1, 1. So the result of the addition may be 16, 10, 12.

Example 93

Answer: The size is uncertain

Analysis: Assume $n = 3$, then $2n + 1 = 7$, and the angles of the 7 angles are 60, 60, 60, 90, 90, 90, 90, and 90, respectively, and the median is 90; then suppose $n = 4$, $2n + 1 = 9$, the degrees of the nine angles are 90, 90, 90, 90, 108, 108, 108, 108, 108, and the median is 108.

Example 94

Answer: 54

Analysis: The single digit of the 34th power of 7 is 9, and the number of each of the 30th power of 6 is 6, so product is 54.

Example 95

Answer: 15120

Analysis: This question can be thought of, first choose 5 people from 10 people to divide the card, $C(5, 10) = 252$ kinds, and then choose 3 people from 5 people Divide three cards of different denominations, $A(3, 5) = 60$, then the two remaining people can only divide two cards of the same denomination, so the answer is $252 \times 60 = 15120$.

Example 96

Answer: 5%

Analysis: Draw a Wayne diagram. According to the data of the title, we can know that the drug and exercise are 43% effective, so only the drug is effective 22%, so only the exercise is effective. It is 5%. [This memo version of the question has been changed, the title should describe the proportion of all people]

Example 97

Answer: $C(3, 10) \cdot C(1, 10) \cdot C(1, 10) / C(5, 30)$

Analysis: The denominator is to choose 5 pieces out of 30 pieces of clothing = $C(5, 30)$, and the numerator is $C(3, 10) \cdot C(1, 10) \cdot C(1, 10)$.

Example 98

Answer: A

Analysis: The two have marked a total of 27 songs, which is 27 minus the number of songs they have jointly marked ≤ 20 , so the common mark cannot be 6.

Example 99

Answer: as big

Analysis: The original formula = $k(k-1)$, there must be multiples of 2 in two consecutive integers, so the remainder divided by 2 is 0.

Example 100

Answer: 1392

Analysis: 1-digit numbers are from 1-9, a total of 9; two-digit numbers are from 10-99, a total of 90; three-digit numbers are from 100-500, a total of 401. So digital = $9 + 90 \times 2 + 401 \times 3 = 1392$.

Example 101

Answer: C

Analysis: 20 even factors have 2, 4, 10, 20, odd factors have 1, 5. [The same law as negative numbers]

Example 102

Answer: 15625

Analysis: This can only be 5 to the 6th power to meet the conditions.

Example 103

Answer: The latter is large

The proof method is as follows:

Example 104

Answer: The latter is large

Analysis: The sum of the internal angles of the pentagon is 540 degrees, plus 90 degrees = 630 degrees, and the sum of the internal angles of the hexagon is 720 degrees.

Example 105

Answer: 60-62

Analysis: Draw a normal distribution diagram, and it is obvious that the image of 60-62 is higher, so the proportion is larger.

Example 106

Answer: Not sure

Analysis: If the largest number is m , the minimum value is $m-4$, so the average is significantly smaller than the median. If the maximum number is $m+1$, then the minimum number is $m-3$, then the list is $m-3, m-3, m-3, m, m+1, m+1, m+1$. The average is still less than medium. Digits. There is also a case where the list is $m-3, m, m, m, m+1, m+1, m+1$. At this time, the median = average.

Example 107

Answer: $g / 2 (yx)$

Example 108

Answer: 63

Analysis: $7 \times 6 \times 3 \div 2 = 63$ fields

Example 109

Answer: $1/6$

Analysis: Draw a Wayne diagram, It can be seen that only three people selected vegetables, so the ratio is $3/18 = 1/6$.

Example 110

Answer: $12/35$

Analysis: $C(2, 9) / C(2, 15) = 12/35$.

Example 111

Answer: as big

Analysis: This question should not be tempted by the 40% condition. In fact, it is not useful. 80% of teachers have a master degree, indicating that the proportion of teachers without a master degree is 20%.

Example 112

Answer: 0.75

Analysis: The algorithm for the probability of failing for 6 months is the probability of failing for the first time 0.9 times the probability of failing after 6 months 0.8, so it is calculated to be 0.72, so it is less than 0.75.

Example 113

Answer: $\frac{2}{3}$

Analysis: The numbers that meet the requirements of the question are 2, 4, 5, 6, so the answer is $\frac{2}{3}$.

Example 114

Answer: 12

Analysis: First arrange A and B. There are two methods in total. The remaining 3 people are all ranked, so the answer is 12.

Example 115

Answer: 84 hours

Analysis: $3^2 + 5^2 < 7^2$, so this is an obtuse triangle, so the maximum angle must be greater than 90 degrees.

Example 116

Answer: 16

Analysis: After this number is squared, we only need to look at the last two digits, which must be 36, so the remainder divided by 20 is 16.

Example 117

Answer: 1

Analysis: This question examines the sensitivity of the number. It is found through experiment that the prime number is 97, so 97 is divided by 8 and 12 and the remainder is 1.

Example 118

Answer: ABC

Analysis: $1500 = 2^2 \cdot 3^1 \cdot 5^3$, so $a = 3$, $33333333 = 3 \times 11111111$ (11111111 is not a multiple of 3), so $b = 1$, so all three answers of ABC are correct.

Example 119

Answer: 4 or -3

Analysis: Draw a picture in the rectangular coordinate system of the xy plane. You can see that the base of this triangle is $|b|$ and the height is $|3b-3|$, so there is $|b| \cdot |3b-3| \div 2 = 18$, so Solve for $b = 4$ or -3 .

Example 120

Answer: 36

Analysis: $1 / 9 - 1 / 12 = 1/36$, so 1 alone needs 36 hours to complete this work.

Example 121

Answer: $1/3$

Analysis: Ten digits not greater than 3 can be 0,1,2,3; single digits not greater than 4 can be 0,1,2,3,4, a total of 20 numbers, so the answer is $20/60 = 1/3$.

Example 122

Answer: $n = 4$

Analysis: The meaning of the title is that there are 6 cases where 2 are selected from n , that is, $C(2, n) = 6$, so $n = 4$.

Example 123

Answer: 3 types

Analysis: x can be 250, 252, 248

Example 124

Answer: 3 big

Analysis: The addition of two prime numbers is an odd number, indicating that there must be 2 in it, and because $m < n$, it can only be $m = 2$.

Example 125

Answer: 0.51

Analysis: This question does not need to be considered the first four times. From the fifth X to the seventh X, there may be two cases: XYX and XXX. The previous situation requires X to appear after Y, the probability is 0.7, and then Y appears again. The probability of X is 0.6, so the probability of XXY is 0.42. The probability of XXX is very good, $0.3 \times 0.3 = 0.09$, so the final answer is $0.42 + 0.09 = 0.51$.

Example 126

Answer: Can't compare sizes

Analysis: Because this question does not know whether the price is high or low. If the price reduction is for a high-priced room, the standard deviation will decrease, and if the price reduction is for a low-priced room, the standard deviation will increase.

Example 127

Answer: 5, 6, 7

Analysis: Use polygon internal angle and formula $(n-2) \times 180$, so the expression of each internal angle number is $(n-2) \times 180 / n$, so the calculation of n can be 5, 6, 7.

Example 128

Answer: The same size

Analysis: Assuming $u = 0$, all numbers are 0, then the median $= u = 0$. Assuming $u > 0$, these numbers are arranged from small to large as $-6u, -4u, -2u, u, 3u, 5u, 7u$, and the median at this time $= u$. Assuming $u < 0$, these numbers are arranged from small to large as $7u, 5u, 3u, u, -2u, -4u, -6u$. At this time, the median $= u$. The median is equal to u in all three cases.

Example 129

Answer: 0.8

Analysis: There are 10 ways to select 3 numbers from 5 numbers. Among them, 4, 5, 11 and 4, 7, 11 cannot form a triangle, so the answer is 0.8.

Example 130

Answer: 15

Analysis: try first, the third, seventh and eleventh terms are multiples of 3, then use the sequence to perform an inference and introduce an $+ 4 = 5a_n + 3a_{n-1}$ [the reasoning process everyone try it yourself], this The formula can prove that if the n th term is a multiple of 3, then the $n + 4$ term is also a multiple of 3 (a_n is divisible by 3 and $3a_{n-1}$ is also divisible by 3), so it is a 4-bit period, that is, The numbers represented by 3, 7, 11, 15 ... 59 are all divisible by 3, so there are 15 in total.

Example 131

Answer: D

Analysis: s -squared is a factor of t -squared, indicating that t divided by s is an integer (because s and t are positive integers), so the D option is correct, and other options may not necessarily prove that t / s is an integer.

Example 132

Answer: $25^3 \times 10^4$

Analysis: O cannot be used, so there are 25 letters, because it can be repeated, so it is the third power of 25, and the number is not limited, so it is the fourth power of 10.

Example 133

Answer: as big

Analysis: the original formula $= 3(1 + 3) + 3^3(1 + 3) + 3^5(1 + 3)$, each item has a multiple of 3, each item has 4, so each item can be Divided by 6, so the remainder is 0.

Example 134

Answer: 160

Analysis: $440 + 220 - 500 = 160$

Example 135

Answer: 3

Resolution: The single digits of the four numbers are 6, 1, 5, and 1, so the single digits added up are 3.

Example 136

Answer: equal

Analysis: $f(4m + 1) = (4m + 1)(4m + 2) / 2 = \text{odd}$, $f(4m + 2) = (4m + 2)(4m + 3) / 2 = \text{odd}$, so the front and back are equal.

Example 137

Answer: 490

Analysis: The number of males who introduced the morning shift from the front was 588, so the male to female ratio was $588:252 = 7:3$, so the males of the evening shift were 490 and the females were 210.

Example 138

Answer: 144

Analysis: $3! \times 4! = 144$.

Example 139

Answer: The size is uncertain

Analysis: The median of ace must be c, but the average of bdf can only be determined between b and f, and c cannot be compared with c.

Example 140

Answer: AC

Analysis: Suppose $a = 2n$, $b = 2n + 2$, $c = 2n + 4$, so $a + b + c = 6n + 6$, this number can be divided by 2 and 6, the answer is AC.

Example 141

Answer: 105

Analysis: Each person plays with 6 people, so 7×6 , and then plays 5 times, so $7 \times 6 \times 5$, but repeats every two people, divided by 2, so the final result is $7 \times 6 \times 5 \div 2 = 105$.

Example 142

Answer: D

Analysis: AB does not change the standard deviation of the original number. CDE changes the variance to 0.5 times, 0.1 times, and 0.8 times, so the smallest option is D.

Example 143

Answer: D

Analysis: This question first looks at the single digits of $10k + 3$ behind the equation must be 3. The 11 digits after the exponent are always 1; the 12 digits after the exponent are 2, 4, 8, 6 cycles; 15 after the exponent The single digit is always 5; the single digit after the 17th index is 7, 9, 3, 1 cycle; the single digit after the 19th index is 9, 1, 9, 1 cycle, so only the D option is possible.

Example 144

Answer: $3/8$

Analysis: Suppose the volume of a pot of water is x , so the volume of a bowl $= x / 5$, the volume of a cup $= x / 8$, pour a bowl of water into a glass of water, and $3x / 40$ is left, and then divide this number by $1 / 5x = 3/8$.

Example 145

Answer: 7

Analysis: Directly list 161,252,343,434,525,616,707.

Example 146

Answer: The former is large

Analysis: Draw a graph, and then use the theorem that the sum of the two sides of the triangle is greater than the third side to see that the former is large.

Example 147

Answer: 0

Parsing: the squares of integers that are not multiples of 3 (can be written as $3k + 1$ or $3k + 2$) are all in the form of $3t + 1$,

Proof method:

$$(3k + 1)^2 = 9k^2 + 6k + 1 = 3(3k^2 + 2k) + 1 \text{ as } 3t + 1$$

$$(3k + 2)^2 = 9k^2 + 12k + 4 = 3(3k^2 + 3k + 1) + 1 \text{ is also considered as } 3t + 1$$

Then the two numbers in the form of $3t + 1$ are added, that is, $6t + 2$, which is still regarded as the form of $3m + 2$, and then it is not a multiple of 3. 2 form, so there are no terms in the sequence that are multiples of 3.

Example 148:

Answer: 56

Parsing: The largest integer is required, and other numbers must be the smallest, so we assume that the remaining 9 numbers are 1, 2, 3, 4, 5, 6, 7, 8, and 9, which adds up to 45, so The largest number is $101 - 45 = 56$.

Example 149

Answer: There are many positive factors of 87

Analysis: 87 has four positive factors of 1, 3, 29, 87, 97 is a prime number, and positive factors are only 1 and 97.

Example 150

Answer: 5

Analysis: Calculate separately, $m = 2$, $n = 2$, $p = 1$, so the sum is 5.

Example 151

Answer: 2

Analysis: When $x = 0$, the value of this algebraic formula is the smallest, at this time $= 2$. If $x \neq 0$, the actual sum is greater than two.

Example 152

Answer: 109, 29, 15, 9

Analysis: The original formula can be written as $1 \times \text{root number } 108$, $2 \times \text{root number } 27$, $3 \times \text{root number } 12$, $6 \times \text{root number } 3$. So there are 4 possible answers.

Example 153

Answer: Not sure

Analysis: When $x = -1$, $2^{2x} = 1/4$, $x^{2x} = 1$. When $x = -2$, $2^{2x} = 1/16$, and $x^{2x} = 1/16$. So the size is uncertain.

Example 154

Answer: 13

Analysis: first list the items of the series: -5, 4, 9, 5, -4, -9, -5, 4 ... Then you can see the rule here, every six numbers are cycled, and the sum of every 6 numbers is 0, so to calculate the sum of the first 100 terms, you can only calculate the sum of the 97th, 98th, 99th, and 100th terms. Because the sum of the first 96 terms is 0. The 97th, 98th, 99th, and 100th items are -5, 4, 9, and 5, respectively, so they add up to 13.

Example 155

Answer: 0

Analysis: m can only be of the form 2^k (k is a positive integer), so $2^6 / m$ must also be of the form 2^t (t is a positive integer), so it cannot be equal to $3n$, so such an integer does not exist.

Example 156

Answer: 1

Analysis: $-1 + 0 + 1 = 0$, $-1 + 0 + 1 + 2 = 2$, $-2 + (-1) + 0 + 1 + 2 + 3 = 3$, $-3 + (-2) + (-1) + 0 + 1 + 2 + 3 + 4 = 4$.

Example 157

Answer: 18

Analysis: Set $n = 3k + 1$, then $n^2 + n - 2 = 9k^2 + 9k = 9k(k + 1)$, because k and $k + 1$ must be a multiple of 2, so this algebraic formula must be 18 Divide.

Example 158

Answer: average number $> m$

Analysis: We already know 3 of them, and 2 are left. Consider two extreme cases, one is when all numbers are the smallest $m-2, m-2, m, m, m+6$, the average is $> m$; one is the cases when all numbers are the largest $m-2, m, m, m+6, m+6$, so the average is $> m$. So the mean is always $> m$.

Example 159

Answer: The former is big

Analysis: Because m and n are both negative integers, 10^m and 10^n are both less than 1, so you only need to compare the sizes of 7 and 5.

Example 160

Answer: 0.58

Analysis: This question does not say the relationship between events A and B, so the maximum probability of simultaneous occurrence is the maximum intersection = 0.58.

Example 161

Answer: The former is large

Analysis: The problem is to calculate the interest rate than compound interest and simple interest. Obviously, compound interest is more.

Example 162

Answer: A

Analysis: This kind of problem only needs to find a small multiple of the number, the number of positives is the most, and the number that meets the multiple of the two numbers at the same time is certainly very small.

Example 163

Answer: as big

Analysis: square both sides at the same time can get $4k = -4k$, so $k = 0$.

Example 164

Answer: 1

Analysis: Directly connect the two equations and find $x = 0$ and $y = -2$, so there is only one intersection.

Example 165

Answer: The latter is large

Analysis: The single digit of 165^x is always 5, and the single digit of 156^y is always 6, so the latter is larger.

Example 166

Answer: $1/6$.

Parsing: The numbers divisible by 3 are 0, 3, 6, and 9. The tens place is odd, there are two cases 3 and 9, the hundreds place is even, there is 1 case 6 (0 cannot be in the hundreds place), and the unit place has 4 cases, so there are $1 \times 2 \times 4 = 8$ kinds. The three digits that these four numbers can form are $3 \times 4 \times 4 = 48$ types (0 cannot be in the hundreds place), so the answer is $1/6$.

Example 167

Answer: 8.7%

Analysis: If the market value of No. 4 stock is x , then $x(1-8\%) = 6000$, then $x \approx 6521.74$, and the market value of No. 6 stock = the market value of No. 4, the market value of No. 6 is also 6521.74, which is 5 The number rose by about 8.7%. [You can answer the specific options when you take the test]

Example 168

Answer: 30 types

Analysis: @ has 5 positions, the remaining 4 positions, \$ chooses two, so the final answer is $5 \times C(2, 4) = 30$ types.

Example 169

Answer: $5/2$

Analysis: First list: 2, 5, $5/2$, $1/2$, $1/5$, $2/5$, 2, 5, so every 6 items cycle, so the 135th item = 3rd item = $5/2$.

Example 170

Answer: 7

Analysis: First calculate the minimum value is 3, then the sum of 24 numbers is 217, then the average number is about 9.04, then the maximum number is definitely 10, so the range of this sentence is 7.

Example 171

Answer: $3/5$

Analysis: $C(2, 4) / C(2, 5) = 3/5$.

Example 172

Answer: four.

Analysis: Directly introduce $x^2 - 5x = \pm 1$, both equations have two solutions, so a total of 4 x values meet the problem requirements.

Example 173

Answer: 2

Analysis: The internal angle of the polygon and the formula $(n-2)$ are 180° , and if the internal angle is 360° , the side grows by 2.

Example 174

Answer: 2

Analysis: Draw a Wayne diagram and directly introduce the answer $15 + 17 - 30 = 2$.

Example 175

Answer: 5

Analysis: 4^{32} single digits are 6, 3^{32} single digits are 1, so the overall single digit is 5.

Example 176

Answer: The former is large. [Note that this question means $(a + 1/a)$ squared]

Analysis: The expansion formula $= 2 + a^2 + 1/a^2$, so it is greater than 2.

Example 177

Answer: 12 types

Analysis: To be larger than 300, the hundreds digit can only be 3 or 4. There are two cases. The digits of the hundred and single digits can be selected from the remaining 3 digits, so the answer $= 2 \times A_{2,3} = 12$ kinds.

Example 178

Answer: The former is large

Analysis: the former $= 2 \cdot 2^{-2003} + 2^{-2003} = 3 \cdot 2^{-2003}$, the latter $= 2^{-1} \cdot 2^{-2003} = (1/2) \cdot 2^{-2003}$

Example 179

Answer: A

Analysis: Because the probability of selecting boys from group A is $1/3$, the probability of AB selecting boys at the same time is $\leq 1/15$, indicating that the probability of selecting boys from group B is $\leq 1/5$, so in group B The number of girls must be ≥ 28 , so the total number must be ≥ 35 . The number of girls in group B may be exactly 28. Therefore, the B option can be excluded, and the number of girls in group B can also be large, such as a large number of 1,000. Can exclude the C option, so only A for this question.

Example 180

Answer: A big

Analysis: $A = 3 \times 3 \times 3 \times 3 = 81$, $B = 4 \times 4 \times 4 = 64$.

Example 181

Answer: Not sure

Analysis: If $K \geq 13$, their maximum prime factors are K; if $K < 13$, then the maximum prime factor of $39K$ is 13, which is greater than the maximum prime factor of $40K$.

Example 182

Answer: ACE

Analysis: ab must be an odd number, so $ab + 1$ must be an even number, so the three options of BDF are excluded. When $a = 3$, $b = 3$, $ab + 1$ digits are 0; when $a = 3$, $b = 7$, $ab + 1$ digits are 2; when $a = 1$, $b = 3$, $ab + 1$ digit is 4.

Example 183

Answer: Not sure

Analysis: This problem can be understood with extreme thinking. Assuming that the price of 8 things is less than 100, then the tax will be exempted, so the tax amount = 0; if one of the prices is 290 and the remaining 7 prices are 2, then Since the 290 product is not tax-free, the tax amount = $290 \times 8\% > 20$.

Example 184

Answer: as big

Analysis: The enumeration method. The numbers that conform to this rule are 8, 38, 68, 98. There are 4 in total.

Example 185

Answer: E

Analysis: $1440 = 2 \times 6!$

Example 186

Answer: 80 kinds

Analysis: There are 5 cases for the first position and 4 cases for the second position. The third position cannot be the same as the second position but can be the same as the first position, so there are 4 cases, so there are a total of Combination method = $5 \times 4 \times 4 = 80$ kinds.

Example 187

Answer: as big

Analysis: The size of the two sets of data has a simple linear relationship, so the standard deviation is the same.

Example 188

Answer: 402

Analysis: The number of multiples of 2 is 301, the number of multiples of 3 is 201, and this calculation will be repeated once. The number of multiples of 6 is 100. So the answer is $301 + 201 - 100 = 402$.

Example 189

Answer: 19900

Analysis: When $a = 1$, b can be from 1 to 199; when $a = 2$, b can be from 1 to 198; when $a = 3$, b can be from 1 to 197. Then we found the law: $199 + 198 + 197 + \dots + 1 = 19900$.

Example 190

Answer: 32

Parsing: The median of 77 numbers is the 39th number, so the minimum number inverse should be 32.

Example 191

Answer: Not sure

Analysis: Assuming $n = 7$, $n \div 7$ and $2n \div 7$ can be divided, and the remainder is 0. Suppose $n = 8$, $n \div 7$ remainder is 1, $2n \div 7$ remainder is 2.

Example 192

Answer: The former is large

Analysis: $S_k = 5 \times 2^{k-1}$, so $S_8 = 5 \times 2^7$, $S_{21} = 5 \times 2^{20}$, $S_{13} = 5 \times 2^{12}$, so the two terms are divided $= 2^8$, so the former Big.

Example 193

Answer: CD

Analysis: If b is odd, then a is even; if b is even, then a is odd. So the CD option is correct.

Example 194

Answer: 7:13

Analysis: Suppose A has x at the beginning, then B has $4x$, and after the reaction, A has $x + 0.75x$ and B has $3x + 0.25x$, so the ratio is 7:13.

Example 195

Answer: 19900

Analysis: Set $r = 1$, then s can be 3, 5, 7, ..., 399, a total of 199; set $r = 3$, then s can be 5, 7, 9, ..., 399, a total of 198, so analogy. There are $199 + 198 + 197 + \dots + 1 = 19900$ in total.

Example 196

Answer: 30 kinds.

Analysis: First consider which 4 pairs to choose from, so $C(4, 5) = 5$ cases, then determine which 2 pairs from 4 pairs are boys, there are $C(2, 4) = 6$ cases, and the rest 2 pairs are naturally girls. So the answer is 30 kinds.

Example 197

Answer: 12 types

Analysis: The two books are bundled together as three elements, so it is $A(3, 3)$, and then these two elements also have 2 arrangements, so the answer is $A(3, 3) \times 2 = 12$ Species.

Example 198

Answer: 48 types

Analysis: First determine the middle position, there are 2 cases, and the remaining 4 flags are all lined up, so $A(4, 4) = 24$ kinds, so there are 2×24 kinds in total.

Example 199

Answer: 6

Analysis: 3 cases of 6: 1 case. Case of two 6's and one 7's: three. Case of 1 6 and 2 7's: 2 (note that 776 does not work). Case of 3 7's: 0.

Example 200

Answer: 4/70

Analysis: There are a total of 700 rooms. What meets the requirements of the question is $C(1, 2) \times 10 \times C(1, 2) = 40$ kinds, so the answer is 4/70.

Example 201

Answer: as big

Analysis: This sequence must be symmetrical about 0, so the sum of the numbers is 0, and the sum of the minimum and maximum numbers is also 0.

Example 202

Answer: D

Analysis: median is 9, indicating $z = 9$, in order to make the least possible number exist, the number should be as large as possible, so it is best to $y = 9$, so $x = 3$.

Example 203

Answer: E

Analysis: To make the largest number exist, try to have as many small numbers as possible, so it is better to have 3 2s, and then because 2 is the only mode, you can have 2 10s, one 11, and then the last number $= 7 \times 9 - 2 \times 3 - 10 \times 2 - 11 = 26$.

(Step 2 of this method is very jumpy, and many students may not understand it. It is recommended to use the first method)

Example 205

Answer: 543

Analysis: This kind of question can only be pieced together, the number sensitivity is examined, and the answer can only be 543.

Example 206

Answer: 20

Analysis: Drawing the Wayne diagram, we can see that there are 15 people who are cats and dogs, so there are 20 people who are only cats but not dogs.

Example 207

Answer: 0.4 large

Analysis: The original formula $= -P^2 + P = -(P - 1/2)^2 + 1/4$, so when $P = 1/2$, the maximum is 1/4.

Example 208

Answer: $1/30$

Analysis: $C(3, 4) / C(3, 10) = 1/30$

Example 209

Answer: Large arithmetic mean

Analysis: The median is definitely 3^{n+2} . Since these numbers have a 3 times relationship, the latter number is much larger than the previous number, so the arithmetic mean must be greater than the median. You can also bring in special values to enumerate Calculation.

Example 210

Answer: as big

Analysis: According to the formula of proportional series, $C_i = (1/7)^{i-1}$, so $C_{12} = (1/7)^{11}$, $49^7 = 7^{14} = (1/7)^{-14}$, $C_{26} = (1/7)^{25}$, multiplying the two = $(1/7)^{11}$.

Example 211

Answer: 25

Analysis: To have the largest possible value, there must be 3 2s, so the first four numbers must be 2, 2, 2, 8. The 5th and 6th numbers are as small as possible, so they are 8 and 9, respectively. The sum of 7 numbers = $7 \times 8 = 56$, so the maximum number = 25.

Example 212

Answer: 8

Analysis: $\pi r^2 : 2\pi r = 4$, approximately $r = 8$.

Example 213

Answer: $y / 100$

Analysis: The slope of the function image of the third-order root y is gradually decreasing, and the function image of $y / 100$ is a straight line. When $y = 1000$, the two algebraic formulas are equal, so when $y > 1000$, the third-order root is y should be smaller.

Example 214

Answer: $m(1 + 0.04)^3 + m(1 + 0.04)^2 + m(1 + 0.04)$

Example 215

Answer: 37%

Analysis: This kind of question will be explained as a key question in the Weige Math class. The basic idea is to draw the table as follows:

	lawyer	Non-lawyer	Summary
--	--------	------------	---------

male	37%	8%	45%
Female	$55\% \times 60\% = 33\%$	twenty two%	55%
Summary	70%	30%	

Lawyers = 70%, then 30% of non-lawyers, 55% of women, 45% of men, and then said that 60% of women are lawyers, so female lawyers account for a total of 33%, and then because lawyers are a total of 70%, so male lawyers It's 37%.

Example 216

Answer: 1/15

Analysis: $C(2, 3) / C(2, 10) = 1/15$

Example 217

Answer: equal

Analysis: expand to the left to get $a^2 + 1 / a^2 = 3$

Example 218

Answer: BCD

Analysis: Because $x^2 + y^2$ is an even number, x and y must be different to be even numbers, and different to be odd numbers, so the BCD in the options below must be guaranteed to be even numbers.

Example 219

Answer: 40/7

Analysis: This problem can first calculate the volume of all oils = 80π , and then imagine that if the height of the final oil is the same, it is equal to a three-dimensional figure with a bottom surface area of 14π , so the height = $80\pi \div 14\pi = 40/7$

Example 220

Answer: 60%

Analysis: Suppose there are x books in biography, so there are 20x books in paperback, and $100x / 3$ books in all books, so the proportion of paperback in all books = $20x : 100x / 3 = 60\%$

Example 221

Answer: Not sure about size

Analysis: Because I don't know how many people there are, I'm not sure what the final average score is.

Example 222

Answer: equal

Analysis: This problem needs to find the law first. The remainder of the power exponent of 2 divided by 3 has the law: 2,1,2,1,2,1,32 power is just on law 1, so the remainder is as large as 1.

Example 223

Answer: equal

Analysis: This question is to choose 2 points from 6 points to form a line segment. The answer is $C(2, 6) = 15$.

Example 224

Answer: 60 types

Analysis: $5 \times 4 \times 3 = 60$ kinds.

Example 225

Answer: ABE

Analysis: The original formula $= (n-1)n(n+1)$, which is the product of three consecutive positive integers, so there must be multiples of 2 and 3, so there must be multiples of 6.

Example 226

Answer: 8 hours

Analysis: AB can be launched together to complete this work takes 6 hours, so the sum of the work efficiency of the two of them is $1/6$, A does the remaining $1/4$ to take 6 hours, so A's work efficiency is $1/24$, so The working efficiency of B is $1/6 - 1/24 = 1/8$, so it takes 8 hours for B to complete the work alone.

Example 227

Answer: D

Resolution: 36 and 27 are both multiples of 9.

Example 228

Answer: 18 types

Analysis: This question is more complicated, we must consider it thoroughly. Multiples of 4 are 0, 4, 8, 12, 16, 20, 24. Multiples of 5 are 0, 5, 10, 15, 20. Then add the sum before and after to satisfy the question. There are 4 cases when 0 times 4 and all multiples of 5 (except 0) are matched, and 1 times 4 can be matched with all multiples of 5 and there are 5 cases. 2 times 4 can be matched with 0, 5, 10, 15 and there are 4 cases. 3 times 4 can be matched with 0, 5, 10, there are 3 cases. 4 times 4 can be matched with 0, 5 and there are 2 cases. 5 times 4 can be matched with 0, there are 1 cases. 6 times of 4 can be matched with 0, there are 1 cases. There are $4 + 5 + 4 + 3 + 2 + 1 + 1 = 20$ kinds in total, exclude 0 times 4 times of $4 + 5$ times 4 times $= 20$ and 5 times 4 times $+ 5$ times 5 times $= 20$ kinds of duplicates, and then exclude 1 of $4 + 4$ of $5 = 6$ of $4 = 24$. So there are 18 types left.

[Note: I heard that there is another version of this question: how many positive integers are less than 25, satisfy the condition: equal to the sum of positive multiples of 4 and positive multiples of 5. If it is

this version, the title is even simpler. If you list it directly, the answer is 10. So when you take the exam, you must take a hard look at which version, don't write the answer blindly]

Example 229

The answer: $50^2 / 49$

Example 230

Answer: $40/3$

Analysis: $(1/10 + 1/20) / 2 = 3/40$, then find the reciprocal so the answer is $40/3$.

Example 231

Answer: The latter is large

Analysis: the latter = 2 times the former, according to the law of standard deviation, the latter's standard deviation is also twice the former.

Example 232

Answer: 66.7%

Analysis: Let the expenditure be x , so the income after tax is $100x / 15$, and the income before tax is $10x$, so the answer is $100x / 15: 10x = 2/3 = 66.7\%$

Example 233

Analysis: Not sure

Analysis: The law of the single digits of 7^n is 7,9,3,1; the law of the single digits of 3^n is 3,9,7,1. So the absolute value of xy may be 4,0, so the size cannot be compared.

Example 234

Answer: 25:24

Analysis: Set the number of male students in the math class to x , then the number of female students in the math class is $1.25x$, the number of male students in the English class is $1.5x$, and the number of female students in the English class is $1.2x$, so the answer is $1.25x: 1.2x = 25: 24$.

Example 235

Answer: CDE

Analysis: draw a Venn diagram. The intersection of two sets has a minimum of 12 elements and a maximum of 60 elements, so the number of elements in the A set and the B set is in the range of 12-60 (inclusive), so the answer is CDE.

Example 236

Answer: A big

Analysis: $A = P (1 - X / 100)^2$, expanded by the perfect square formula, and the final result is greater than B.

Example 237

Answer: $6s / t$

Analysis: $1/10$ minutes = 6 seconds, so there is $s : t = \text{steps} : 6$, so $\text{steps} = 6s / t$

Example 238

Answer: 57 types

Analysis: Let's not consider that shirts and pants cannot be matched. There are $5 \times 4 \times 3 = 60$ types. A shirt and a pair of pants can be matched with 3 pairs of shoes, so 3 is subtracted, so the final answer is 57 types.

Example 239

Answer: BC

Analysis: This question must first try to enumerate.

Option A, the case where 2 appears first: 2, 12, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 32, 42 is exactly 15 here, but further down to 43, 44, 45 ... are not accompanied by 2, so 15 times 2 is not sure what the last number is. [Please note: 22 is 2 2] (WeChat public account: Teacher Zhang Wei GRE)

Option B, first list the occurrence of 5: 5, 15, 25, 35, 45, 50, 51, 52, 53, 54, 55, 56, 57, 58 here just 15, and then the following 59, so Can be sure that the last number is 58. [Please note that 55 is 2 5]

Option C, first list the occurrence of 8, 8, 18, 28, 38, 48, 58, 68, 78, 80. If the following is 81, 10 8 will appear, so 8 appears 9 times. It can be determined that the last number is 80, and then it contains 9, 19, 29, 39, 49, 59, 69, 79, which is exactly 8 9s. So the C option can determine that the last number is 80.

Example 240

Answer: 17 people

Analysis: We assume that the new class has x people. The original average number of people in each class was y , so there are $20y + x = 21(y - 0.5)$, so $x = y - 10.5$ is introduced, because y is 27 to 28 And x must be an integer, so it can only be $y = 27.5$, $x = 17$.

Example 241

Answer: C

Resolution: The root number is 80, which is the closest to 9.

Example 242

Answer: 16.1

Analysis: J answered the extra question 10 points correctly, the class is a total of 25 people, so these 10 points increased the class average score by 0.4 points, so J is $10 + 6.5 - 0.4 = 16.1$ points higher than the new average score.

Example 243

Answer: $1/5$

Analysis: It is possible to draw 9 cases of $1/2$, $2/3$, $3/4$, $4/5$, $5/6$, $6/7$, $7/8$, $8/9$, $9/10$, and the denominator is from $10 \text{ Choose } 2 = 45$ cases, so the answer is $1/5$.

Example 244

Answer: 165

Analysis: This question is equivalent to choosing 3 people from 11 people, so $C(3,11) = 165$.

Example 245

Answer: ABCDE

Analysis: if a_n is divisible by 100, there must be two 5s in the factor a_1 , so there are only two 5s in the factor of the F option.

Example 246

Answer: 8 types

Analysis: The three elements 2, 4, and 6 are required, and the remaining 3 elements can be left unselected. There are 1 case. You can choose 1 and 3 cases. Choose 3, there are 1 case, so there are 8 cases.

Example 247

Answer: 10

Analysis: In order to make the standard deviation small, the number must be closer to the average. The average is 9, so the nearest is 10.

Example 248

Answer: 50

Analysis: First list a few items 1, -2, 3, -4, so the sum of each item is -1, so the sum of the first 98 items is -49, and then add 99, so the final sum is 50.

Example 249

Answer: $7/8$

Analysis: No, the probability of not being a red ball twice is $3/8$ times $1/3 = 1/8$, so the probability of the first ball being drawn is the red ball or the probability of the second being the red ball is $7/8$.

Example 250

Answer: 7

Analysis: List the formulas $2n + m = 11$, $n + 2m = 10$, find $m = 3$, $n = 4$, so $m + n = 7$.

Example 251

Answer: AB

Analysis: The second year A earns $2r$ and B earns $20r$, so A is right. In the fourth year, A earned $8r$ and B earned $40r$, so B was right. In the eighth year, A earned $128r$ and B earned $80r$, so C was wrong.

Example 252

Answer: 0

Analysis: The original formula = $123^3 (123-1) + 123 (123-1) = 123^3 \times 122 + 123 \times 122$, so the remainder when divided by 122 is 0.

Example 253

Answer: 4

Analysis: The problem is to push the law. The law of tens digits is 0, 4, 4, 0, so the digit corresponding to the 2007 digit is 4.

Example 254

Answer: A big

Analysis: at least one red, you must choose the red one, and then choose one from the remaining 99, a total of 99 cases; two are white, you must choose 2 from the 4 white, There are 6 cases in total, so A is greater than B.

Example 255

Answer: Top 10

Parsing: The range of 10 consecutive integers is 9.

Example 256

Answer: Not sure

Analysis: consider $n = 0$

Example 257

Answer: Unable to compare

Analysis: Because the percentiles cannot know the exact arrangement, the size cannot be compared.

Example 258

Answer: A

Analysis: A is easy to understand. The median and average numbers in Option B are not directly related and are excluded. Options C and B are the same.

Example 259

Answer: BC

Analysis: This question needs to draw a male and female Wayne diagram separately. Option A is wrong. 45 of the males do not participate, and then there are 120 in total, so the ratio is not 45%. B is correct. Only one female is $35 + 26 = 61$, so the ratio is $61 \div 110 > 55\%$. C is correct, a total of 105 people participated in choir, of which 21 people participated in both, so the proportion was 20%.

Example 260

Answer: B

Analysis: A excludes, for example, the sum of three consecutive integers of 1, 2, 3 is 6. The B option is correct, the C option should be $m + [(k-1) / 2]$, so C is wrong.

Example 261

Answer: A

Analysis: $n(n^2 - 1) = (n-1)n(n+1)$ is the product of 3 consecutive integers, there must be multiples of 2 and multiples of 3, so the answer is A.

Example 262

Answer: 1/63

Analysis: 1/210 pounds of tea per cup of tea, 1/40 pounds of coffee per cup of coffee, suppose the coffee bought $12x$ cups and the tea sold x cups, so the weight of the coffee is $12x \times 1/40 = 3x/10$. The weight of tea is $x/210$, so the ratio is $x/210$ to $3x/10$, so the answer is 1/63.

Example 263

Answer: 44

Analysis: To have the largest number, you must make the other numbers as small as possible, so 27, 28, and 29 are the first three numbers, and the last is 44, which is just to guarantee the 32nd average.

Example 264

Answer: 206

Analysis: $C(1,10) \times C(1,8) + C(1,10) \times C(1,7) + C(1,8) \times C(1,7) = 206$.

Example 265

Answer: 12 types

Analysis: For example, if the first line is abc, then the second line can only be bca or cab. When the second line is set, the third line is set. There are 6 methods in the first line, so there are 2 methods in the second and third lines, so the multiplication is 12 methods.

Example 266

Answer: C

Analysis: $t/(t-1)$ is the closest to 1, so it has the least impact on the numbers.

Example 267

Answer: A big

Analysis: The standard variance measures the degree of dispersion of the numbers. Obviously, the 13 and 19 of the first set of data make the data more scattered, so the standard variance is larger.

Example 268

Answer: as big

Analysis: first read the meaning of the function, which is the largest integer smaller than the independent variable +1, so $f(1.75) = 1 + 1 = 2$, $f(1.5) = 1 + 1 = 2$.

Example 269

Answer: The former is large

Analysis: This column of numbers may be -10 to 11, so there are 22 numbers in total. It could also be all integers from -4 to 6, so there are 11 numbers at this time.

Example 270

Answer: as big

Analysis: Just draw the picture, there are two points on each side of the line l , so there are 4 points in total.

Example 271

Answer: 85 people

Analysis: Don't consider one person taking multiple courses at the same time, then there are 96 people, 5 people take 2 courses at the same time and repeat 5 times, 3 people take 3 courses at the same time and repeat 6 times, so the correct answer is $96 - 5 - 6 = 85$ people.

Example 272

Answer: C

Analysis: A cannot calculate the average, because there are many combinations of 150 methods, each method may have different averages. B can't calculate the average, there are many ways to combine 50 more, and it may change the average. Option C assumes that x has $2a$ and y has a , so the total price is $4a + 1.5a$ and the total is $3a$, so the average can be calculated.

Example 273

Answer: 284 to 316

Analysis: The maximum value is 58, 59, 60, 69, 70, and the sum is 316; the minimum value is 50, 51, 60, 61, 62, and the sum is 284.

Example 274

Answer: 168

Analysis: Assuming that the parents and children are x people, so $20x + 10x = 420$, so $x = 14$ is introduced, so a total of 28 people, so the total cost $= 21 \times 28 = 588$, so the food to buy is $588 - 420 = 168$ yuan.

Example 275

Answer: 3

Analysis: Listed are 23, 43, 53 respectively.

Example 276

Answer: Unsure

Analysis: The title only said that the number of red balls is greater than 1, but it doesn't know how many, it may be 5 or more, so it cannot be compared with 5.

Example 277

Answer: BF

Analysis: The single digit is 9, so $n = 4k + 2$ is required, so the answer is the BF option.

Example 278

Answer: 21

Analysis: $880 \div 5500 = 16\%$, that is, more than 84% of people, draw a proportional distribution of the normal distribution. This position corresponds to the place of $m + d$, which is $19 + 2$, so the answer is 21.

Example 279

Answer: 53

Parsing: Just enumerate.

Example 280

Answer: Equal.

Analysis: Try to bring in the value. Only when $n = m = 5$ can n be a positive odd number.

Example 281

Answer: D

Analysis: $x = 999999$, this question can be calculated by calculator, only 19 can not be divided.

Example 282

Answer: 8 or 12

Analysis: May be $w = 2, x = 0, y = 2, z = 4$. It might also be $w = 1, x = 5, y = 2, z = 4$.

Example 283

Answer: 10 hours

Analysis: 1 hour and 20 minutes = 80 minutes, $2/3$ of the work is completed, so it takes 120 minutes to complete all the work, so the work efficiency of PS is $1/120$, and the remaining $1/3$ requires 50 minutes, so The working efficiency is $1/150$, so the working efficiency of P is $1/600$, so it takes 10 hours for P to inject water alone.

Example 284

Answer: $2^8 \times 3^{13}$

Analysis: $a_3 = 2 \times 3$, $a_4 = 2 \times 3^2$, $a_5 = 2^2 \times 3^3$, $a_6 = 2^3 \times 3^5$, $a_7 = 2^5 \times 3^8$, $a_8 = 2^8 \times 3^{13}$

Example 285

Answer: $1/16$

Analysis: The probability of getting yellow socks every time is $1/4$, so the probability of getting yellow socks twice is $1/16$.

Example 286

Answer: $9/25$

Analysis: The probability of being converted to an opposite event of "no yellow was drawn twice" = $8/10 \times 8/10 = 16/25$, so the probability of yellow being drawn at least once is $9/25$.

Example 287

Answer: $1/3$

Analysis: There are at least two cases containing two and three cases, so the algorithm is $(C_{4,2} \times C_{6,1} + C_{4,3}) / C_{10,3} = 1/3$.

Example 288

Answer: Add to 113

Analysis: This rule remembers a rule: adding or subtracting the largest number has the smallest effect, and adding or subtracting the smallest number has the largest effect, so the answer is 113.

Example 289

Answer: 2

Analysis: The lower bottom is 6 longer than the upper bottom, so after the division, the lower hypotenuse is shorter than the sum of the upper hypotenuse, and the total length of the hypotenuse is 10, so the length of the hypotenuse of the bottom trapezoid can only be 2.

Example 290

Answer: 11

Analysis: Carrying out the rule that the single digit is a power exponent single digit rule of 3397, so n must be a $4k + 3$ number, so $n = 11$.

Example 291

Answer: $1/9$

Analysis: 5 pairs = 10, so the answer is $5 \times C_{2,2} / C_{10,2} = 1/9$.

Example 292

Answer: There are many H associations

Analysis: By drawing a Wayne diagram, the number of R associations is $2/3$ of the number of H associations.

Example 293

Answer: AD

Analysis: Suppose N is $zxy = 100z + 10x + y$, so $N - 100x - y = 100z - 90x$, this number must be completely divided by 2 and 5, so the answer is AD.

Example 294

Answer: ABCDEF

Analysis: The least common multiple of 12 and 20 is 60. Assuming that X and Y enter the station at the same time at 6 o'clock, 7 o'clock, 8 o'clock, 9 o'clock, and 10 o'clock will enter the station again at the same time, so the maximum is 5 times. In the least cases, the pit stop is at X6, and the pit stop is at 6:01, so it is impossible for them to pit at the same time, so the answer is ABCDEF.

Example 295

Answer: 267

Analysis: There are 333 multiples of 3 in 1-1000, and the number that is divisible by 5 is a number that is divisible by 15. There are 66 numbers, so there are $333 - 66 = 267$ numbers that are not divisible by 5. .

Example 296

Answer: $2/9$

Analysis: as shown

	truck	Non-truck	Summary
Four-wheeled vehicle	$2x / 5$	$4x / 5$	$6x / 5$
Non-four wheeler	$3x / 5$	0	$3x / 5$
Summary	x	1-x	

Suppose the truck is x, so the non-truck is 1-x, because the four-wheeled trucks account for $2/5$, so the upper right corner is $2x / 5$, so the non-wheeled trucks are $3x / 5$, and the trucks account for four-wheeled vehicles. $1/3$, so non-trucks account for $2/3$ of four-wheelers, so we need to understand the reason for $4x / 5$, so we summarize the four-wheelers $6x / 5$, non-four-wheelers $3x / 5$, and note that there can be no non-four-wheelers. And it is not a truck, so it is $9x / 5 = 1$, so $x = 5/9$, so the ratio of being a truck and a four-wheeler is $2x / 5 = 2/9$.

Example 297

Answer: (120, 240) [Remarks: The options are set to some approximate range during the exam, so there is no need to consider the question that both men and women must have someone]

Analysis: Do it with extreme ideas. First assume that the number of men is 600, and then the number of women is 600. In this way, the number of people who support this policy = $60 + 180 = 240$; then assuming that the number of men is 1,200, the person who supports this policy = 120 people. So the value range is (120, 240).

Example 298

Answer: $28/45$

Analysis: $C8, 2 / C10, 2 = 28/45$.

Example 299

Answer: A

Analysis: Divide the equation and get $(a + b) c = ab$, because $a + b = 20$, so $20c = ab$, many people can't continue here. Here is a point of knowledge: "Basic Inequalities"

$$a + b \geq 2\sqrt{ab} \quad (a \text{ 和 } b \text{ 大于 } 0)$$

So $ab \leq [(a + b) / 2]^2 = 100$, so $20c \leq 100$, that is, $c \leq 5$, so choose A for this answer.

Example 300

Answer: 4800

Analysis: 500-600 accounts for 34%, then 10200, less than 400 should account for 16%, so the answer is 4800.

Example 301

Answer: 15

Analysis: $12!$ There are 10 2s and 5 3s, so $a + b$ equals 15 at most.

Example 302

Answer: 10

Analysis: 6 balls placed in 4 cups are possible $1 + 1 + 1 + 3$, $1 + 2 + 1 + 2$, the former one has $C_4,1 = 4$ kinds, the latter one has $C_4,2 = 6$ kinds, so there are 10 kinds in total.

Example 303

Answer: 4

Analysis: This question is calculated by subtracting the probability that all of them are unreachable, so the formula is $1 - 0.3^n > 0.99$, so $n \geq 4$ is calculated, so the answer is 4.

Example 304

Answer: 18

Analysis: the smallest 6 numbers + the largest 6 numbers = the sum of the 11 numbers + the median, so the median = $35 + 125 - 142 = 18$.

Example 305

Answer: 6

Analysis: The largest number is $(-0.5)^{-2} = 4$, and the smallest number is $(-0.5)^{-1} = -2$, so the range is 6.

Example 306

Answer: 6%

Analysis: 42000 year-on-year increase of 5% means that last year was 40,000, A this year 10200 increased 2% year-on-year, so A was 10,000 last year, so B was 30,000 last year, this year is 31800, so the year-on-year growth is 6%.

Example 307

Answer: Equal.

Analysis: A contains 4, 16, 36, 64, 100, and B contains 1, 9, 25, 49, 81, so they are equal.

Example 308

Answer: $3/10$

Analysis: You can only draw 2 9s out of 3 9s to ensure that the sum is a multiple of 3, so the algorithm is $C_3,2 / C_5,2 = 3/10$.

Example 309

Answer: 12

Parsing: if the first line is abc, the second line may be cab and bca, if the second line is cab, the third line can only be bca, if the second line is bca, the third line can only be cab. There are 6 cases in the first line and 2 cases in the second line. In the case determined in the second line, there is only 1 case in the third line, so there are 12 cases in total.

Example 310

Answer: 23

Analysis: Propose a common factor of $20j$, so $22j + 20j = 20j(22 + 1) = 23 \times 20j$, so the maximum prime factor is 23.

Example 311

Answer: 1

Analysis: This number will be written in the form 500000 ... 00001. The sum of the digits of this number is 6, so dividing by 3 can be divided, so the remainder is 0.

Example 312

Answer: 25%

Analysis: Assuming that the male is x and the female is y , there is $36\% x + 48\% y = 45\% (x + y)$, so $y = 3x$, so males account for 25%.

Example 313

Answer: The average is larger.

Analysis: When n is a positive integer, this exponential function has an average greater than the median.

Example 314

Answer: $1/4$

Analysis: 15 points can only be $10 + 5$, so $C_{2,1} \times (1/2)^3 = 1/4$.

Example 315

Answer: 3 weeks

Analysis: In fact, it is the least common multiple of 3 and 7. It should be 21, so it is 3 weeks later.

Example 316

Answer: The former is large

Analysis: $cd < 0$, $dc > 0$, so a^{c-d} is greater than 1, b^{d-c} is less than 1, so the former is greater than the latter.

Example 317

Answer: 12

Analysis: Just list, 1,2,3,4,6,8,9,12,18,24,36,72.

Example 318

Answer: 10

Analysis: This kind of problem first assumes very bad luck, that is, the colors of the first 9 balls are different (3 colors of 3 each), but no matter which color the 10th ball gets, there will be balls of the same color. [This kind of problem is the drawer principle of primary school mathematics]

Example 319

Answer: Unsure

Analysis: The former $= 4 \times 2^x = 2^{2+x}$, the latter $= 2 \times 4^x = 2^{2x+1}$, the relationship between $2x+1$ and $2+x$ is uncertain.

Example 320

Answer: Unsure.

Analysis: The percentile cannot know the specific number, so the answer is uncertain.

Example 321

Answer: 6/35

Analysis: Probability of both J: $1/7 \times 1/5 = 1/35$, probability of both O: $2/7 \times 1/5 = 2/35$, probability of both N $2/7 \times 1/5 = 2/35$, the probability of both being S: $1/7 \times 1/5 = 1/35$, so the answer is 6/35.

Example 322

Answer: The latter is large.

Analysis: First list the former 2, 3, 5, 7, 11, 13, 17, 19, 23, so the median is 11. Let's enumerate the latter 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, so the median is 14, so the latter is large.

Example 323

Answer: 48

Analysis: Think of AC as a person first, so there are $4! = 24$ kinds of arrangement methods, and then AC can change the position left and right, so multiply by 2, so the answer is 48 kinds.

Example 324

Answer: 72%

Analysis: The number of college students who participated in the survey was $80\% \times 65\% = 52\%$, and then we assumed that 20% of those who did not participate in the survey were all college students, and college students accounted for a maximum of 72%.

Example 325

Answer: 120

Analysis: The principle of multiplication is sufficient. The answer is $4 \times 3 \times 2 \times (4+1) = 120$. Because the scarf can be worn, there are actually five ways to choose a scarf.

Example 326

Answer: 1/12

Analysis: If the two figures are similar, the area ratio is equal to the square of the side length ratio, so the answer is $\frac{1}{3} \times (\frac{1}{2})^2 = \frac{1}{12}$.

Example 327

Answer: Not sure

Analysis: According to the Pythagorean theorem, we know that the length of the third pass is the largest root number 7 and the smallest one is 1, so it is uncertain about the size relationship with $\frac{3}{2}$.

Example 328

Answer: ABC

Analysis: Option A, draw Venn diagram, you can see that if there are 20 people who did not go to both museums, then 15 people go to Museum B. Option B, draw a Venn diagram and find that the situation is the same as that of A. The number of people going to the B museum is 15 people. Option C, draw the Wayne chart and find that the situation is the same as AB. The number of people going to the B museum is 15 people.

Example 329

Answer: 6

Analysis: $210 = 2 \times 3 \times 5 \times 7$, choose 2 from these 4 prime factors to meet the needs of the question, so the answer is 6 kinds.

Example 330

Answer: C

Analysis: enumerate $48 = 23 + 25$, $50 = 23 + 27$, $56 = 27 + 29$, $44 = 23 + 21$, so choose C for the answer.

Example 331

Answer: 24

Analysis: Suppose the number of households with 1 newspaper is x , then the number of households with 3 newspapers is $2x$, and the number of households with 2 newspapers is $3x$. $X = 8$, so the number of households who want two newspapers is 24.

Example 332

Answer: 1140

Analysis: In fact, this question is to tell you that $A(20,3) = 6840$, and then calculate $C(20,3) = 6840 \div 6 = 1140$.

Example 333

Answer: 14

Analysis: There are 6 digits at the beginning of 6 and 6 digits at the beginning of 7. The smallest digit at the beginning of 8 is 8679 and then 8697, so it ranks 14th.

Example 334

Answer: 10

Analysis: Just use the enumeration method: 3000, 2001, 2100, 2010, 1110, 1011, 1101, 1200, 1020, 1002.

Example 335

Answer: $1/4$

Analysis: First draw a Wayne diagram (figure omitted). It can be seen that FM has 5,000 people, and then F has 20,000 people in total, so the probability is $5000/20000 = 1/4$.

Example 336

Answer: 28 kinds.

Analysis: AB must win at the same time, which means that two of the remaining 8 companies can win, so the algorithm is $C(8,2) = 28$.

Example 337

Answer: You cannot compare size relationships.

Analysis: If $X \leq 1/2$, the standard deviation of Q and R is the same. If $1/2 < X \leq 1$, the standard deviation of R at this time is twice the standard deviation of Q, so this time is not equal, so the magnitude relationship is uncertain.

Example 338

Answer: 1

Analysis: $3^{64} = 9^{32} = (8 + 1)^{32}$, and then expand according to the binomial theorem (the binomial theorem was explained in the last recording of the punch class, so I won't go into details here) Both are multiples of 8, and the last 1 remaining is the remainder.

Example 339

Answer: 15.

Analysis: In fact, the number of multiples of 5 is subtracted from the number of multiples of 20. There are 21 multiples of 5 and 6 multiples of 20, so the answer is 15.

Example 340

Answer: 4

Analysis: -14 is the smallest, the median of 19 numbers is the 10th digit, so +18 is the size of the median, so the median is 4.

Example 341

Answer: You cannot compare sizes.

Analysis: Because you don't know the specific arrangement of the two groups of data, you can't compare them.

Example 343

Answer: 20.25

Analysis: This problem remembers a rule. When $X = Y$, the XY product is the largest, so the answer is 20.25.

Example 344

Answer: $4/9$

Analysis: The tens place is even, and only 2, 4, 6, 8 can be used as the tens place. There may be 9 cases in total, so the probability is $4/9$.

Example 345

Answer: 18.

Analysis: Assume that the largest number is $2x$, and the other numbers are x , so $11x = 101$, so $x = 9.18$. x rounding can only take 9, so the maximum number is 18.

例346

答案：后者大。

解析：这个题不是常规的代数计算题，而是需要分析分数的特征，因为 $abcde$ 是互不相同的数字。所以 $0.abcde$ 这个数字最小是 $0.\underline{01234}$ （循环），所以如果 $1/X$ 的最小值就是 $0.\underline{01234}$ ，所以 $x < 1/0.\underline{01234}$ 。也就是说这个题要求 X 小于 $1/0.\underline{01234}$ ，算出来是一个81左右的数字，也就是 X 必然小于83。

Example 347

Answer: Equal.

Analysis: Suppose the number of times to get two points is x and the number of times to get 4 points is y , then $(2x + 4y) / (x + y) = 3.8$, and the solution is $y = 9x$, so the answers are equal.

Example 348

Answer: The former is large

Analysis: The minimum product is $7 \times 11 \times 13 = 1001 > 750$.

Example 349

Answer: equal

Analysis: First borrow a little knowledge point: the sum of all digits of a number that can be divided by 9 can also be divided by 9. So 12345678910 is first divided into $12345678900 + 10$, and then the first 12345678900 digits are summed (equal difference sequence sum formula) = 45 (a multiple of 9). So the first 12345678900 is a multiple of 9, so the remainder is the remainder of 10 divided by 9, so the remainder is 1.

Example 350

Answer: 1: 4

Analysis: The length ratio of the diagonal line = the length ratio of the side length, so the side length is 1: 2, and the area is 1: 4.

Example 351

Answer: The latter is large.

Analysis: Both are equal difference series, and the average of the first and last terms can be calculated. So the average of 3 and 198 = 100.5, and the average of 6 and 198 is 102, which is large.

Example 352

Answer: Unable to compare

Analysis: when $n = 4$, $p = 17$; when $n = 6$, $p = 37$, so the size relationship cannot be compared.

Example 353

Answer: 10 types

Analysis: There are two methods of 1113 and 1122. There are 4 cases of 1113 and 6 cases of 1122 [$C(4,2) = 6$], so there are 10 cases in total.

Example 354

Answer: Unable to compare

Analysis: It is possible that there is another angle of 62° , and the last angle is 56° . It is also possible that the other two angles are both 59° .

Example 355

Answer: The latter is large.

Analysis: if a_1, a_2, b_1, b_2 are all numbers greater than 0, and if $a_2 / b_2 > a_1 / b_1$, then $(a_1 + a_2) / (b_1 + b_2) > a_1 / b_1$, $1111/11111 = (111 + 1000) / (1111 + 10000)$, and then $1000/10000$ is greater than $111/1111$, so $(111 + 1000/1111 + 10000) > (111/1111)$, So the latter is bigger.

In fact, it is sufficient to compare the magnitude relationship between $1/11$ and $11/111$. This number relationship definitely meets the same rule.

Example 356

Answer: BE

Analysis: The sum of the first 12 digits is 1200, the sum of the last 12 digits is 2400, and the total is 3600. If the median is x , then $3600 + x$ must be a multiple of 25, which can be brought into the option test. So the answer is BE.

Example 357

Answer: C

Analysis: The average of A cannot see the specific salary of each person; the median of B cannot see the salary of each person. C is correct, because the 90th percentile wage must be greater than the 80th percentile wage, and then naturally greater than the Y factory's 70th percentile wage.

Example 358

Answer: The former is large

Analysis: First remember a theorem, a set has n elements, then its subset has 2^n powers.

Example 359

Answer: The former is large

Analysis: According to the description of the title, it is obvious that the latter will reduce the degree of dispersion of the data, so the standard deviation is also reduced.

Example 360

Answer: 48

Analysis: To make the most red, you need to show as little blue as possible, so put the blue in the center and then the blue in the middle of each face. The minimum number of blues is six, so the number of reds is 48.