A sheet of paper has statements numbered from 1 to 30. For all values of n from 1 to 30, statement n says "At most n of the statements on this sheet are false". Which statements are true and which are false?

* 
* The odd numbered statements are true and the even numbered are false.
* 
* The even numbered statements are true and the odd numbered are false.
* 
* All statements are true.
* 
* All statements are false

Ans :

Statement 30 reads, "At most 30 of the statements on this sheet are false"  
Since there are only 30 statements on the sheet, there can't be 31 or more false statements. The statements could be true, false, or neither, but there aren't more than 30 of them. So statement 30 is true.  
  
Now look at statement 29. Statement 30 is already true, so that leaves 29 possible statements that could possibly be false, at most. So statement 29 is true.  
  
And so on

There are two water tanks A and B, A is much smaller than B. While water fills at the rate of one litre every hour in A, it gets filled up like 10, 20, 40, 80, 160 .. in tank B. (At the end of first hour, B has 10 litres, second hour it has 20, and so on). If 1/32 of B's volume is filled after 3 hours, what is the total duration required to fill it completely?

* 
* 10 hours
* 
* 9 hours
* 
* 7 hours
* 
* 8 hours

Ans: 10,20,40,80,160,320,640,1280

The IT giant Tirnop has recently crossed a head count of 150000 and earnings of $7 billion. As one of the forerunners in the technology front, Tirnop continues to lead the way in products and services in India. At Tirnop, all programmers are equal in every respect. They receive identical salaries ans also write code at the same rate.Suppose 12 such programmers take 12 minutes to write 12 lines of code in total. How many lines of code can be written by 72 programmers in 72 minutes?

* 
* 432
* 
* 72
* 
* 12
* 
* 6

Alok and Bhanu play the following min-max game. Given the expression

N = 12 + X\*(Y - Z)

where X, Y and Z are variables representing single digits (0 to 9), Alok would like to maximize N while Bhanu would like to minimize it. Towards this end, Alok chooses a single digit number and Bhanu substitutes this for a variable of her choice (X, Y or Z). Alok then chooses the next value and Bhanu, the variable to substitute the value. Finally Alok proposes the value for the remaining variable. Assuming both play to their optimal strategies, the value of N at the end of the game would be

* 
* -69
* 
* 12
* 
* 93
* 
* 30

Planet fourfi resides in 4-dimensional space and thus the currency used by its residents are 3-dimensional objects. The rupee notes are cubical in shape while their coins are spherical. However the coin minting machinery lays out some stipulations on the size of the coins.

* The diameter of the coins should be at least 64mm and not exceed 512mm.
* Given a coin, the diameter of the next larger coin is at least 50% greater.
* The diameter of the coin must always be an integer.

You are asked to design a set of coins of different diameters with these requirements and your goal is to design as many coins as possible. How many coins can you design?

* 
* 5
* 
* 6
* 
* 8
* 
* 9

Ans: 64,96,144,216,324,486

Anoop managed to draw 7 circles of equal radii with their centres on the diagonal of a square such that the two extreme circles touch two sides of the square and each middle circle touches two circles on either side. Find the ratio of the radius of the circles to the side of the square.

* 
* 1:(2+ 7√2)
* 
* 1:(4+ 7√3)
* 
* (2+ 7√2):1
* 
* 1:(2+ 6√2)

Ans: The extreme circles will have radius perpendicular to sides..so the part of diagonal till the centre of cirlce will be sqrt(2)r [Make diagram and it will be clear]..now remaining portion is r , 5 more circles will contribute 10r and last circle will contribute sqrt(2)r + r.  
  
total 12r + 2sqrt(2)r = sqrt(2) side  
  
so ratio of r:s = 1/2+6sqrt(2)

The pacelength P is the distance between the rear of two consecutive footprints. For men, the formula, n/P = 144 gives an approximate relationship between n and P where, n = number of steps per minute and P = pacelength in meters. Bernard knows his pacelength is 164cm. The formula applies to Bernard's walking. Calculate Bernard's walking speed in kmph.

* 
* 11.39
* 
* 236.16
* 
* 23.62
* 
* 8.78

Ans: n/1.64 = 144  
n = (144 \* 1.64) = 236.16  
  
No. of steps per minute = 236.16  
Distance per minute = (236.16 \* 164) cm  
Distance per minute = 0.3873024 km   
Distance per hour = 23.238144  
  
Speed = 23.238144 km/h

The teacher is testing a student's proficiency in arithmetic and poses the following question.

1/3 of a number is 3 more than 1/6 of the same number. What is the number?

Can you help the student find the answer?

* 
* 18
* 
* 6
* 
* 12
* 
* 21

Ans: Let the number be x , then  
x/3 = x/6 + 3  
=> x = 18

On the planet Oz, there are 8 days in a week- Sunday to Saturday and another day called Oz day. There are 36 hours in a day and each hour has 90 min while each minute has 60 sec. As on earth, the hour hand covers the dial twice every day.

Find the approximate angle between the hands of a clock on Oz when the time is 12:40 am.

* 
* 89
* 
* 251
* 
* 111
* 
* 71

Ans: Angle covered by hour hand in 1 hour = 360/18 = 20 degree  
  
in one min 20/90 = 2/9 degree  
  
angle covered by minute hand in one min = 360/90 = 4 degree  
  
relative degree difference = 4 - 2/9 = 34/9  
  
now -240 + 34/9 \* 40 = 88.88  
  
so 89 degree

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* 
* 12
* 
* 6
* 
* 72
* 
* 18

A hollow cube of size 5 cm is taken, with a thickness of 1 cm. It is made of smaller cubes of size 1 cm. If 4 faces of the outer surface of the cube are painted, totally how many faces of the smaller cubes remain unpainted?

* 
* 500
* 
* 900
* 
* 800
* 
* 488

Ans: The big cube is completely hollow.. But, the thickness of

its side is 1cm & this is made up of smaller cubes.

Just like the walls of a room. The room is hollow, but, its

thickness is due to smaller bricks. The 4 walls of this room

is painted from the outside. And, you are asked totally how

many sides of all the bricks are now unpainted.

First, you need to know how many bricks (small cubes) are there.

Size of big cube = 5cm

Total volume of the big cube = 5\*5\*5 = 125cm^3

Size of the hollow cube inside the big cube = 3cm

Volume of the hollow space inside the big cube = 3\*3\*3 = 27cm^3

Therefore, volume occupied by small cubes (or volume of

thickness) = 125 - 27 = 98cm^3

Size of each small cube = 1cm

Volume of each small cube = 1\*1\*1 = 1cm^3

Total number of small cubes in wall = 98 / 1 = 98

In short, 98 small cubes make up the wall of the big cube.

Each cube has 6 faces, so 98 cubes have = 98\*6 faces = 588

The four sides of the big cube have 100 painted faces.

Because each big side has 25 faces of the small cubes.

Therefore, total unpainted faces = 588 - 100 = 488

There are two boxes, one containing 10 red balls and the other containing 10 green balls. You are allowed to move the balls between the boxes so that when you choose a box at random and a ball at random from the chosen box, the probability of getting a red ball is maximized. This maximum probability is

* 
* 37/38
* 
* 14/19
* 
* 3/4
* 
* 1/2

Ans: You are allowed to move the balls between the boxes so that

There are two boxes, one containing 10 red balls and the

other containing 10 green balls.when you choose a box at

random and a ball at random from the chosen box, the

probability of getting a red ball is maximized. This maximum

probability is

When ever you think your selected box have maximum no of

probability that means p(ball taken) maximum is 1.

but you must first select the box from two boxes this p(box

choosen) is always constant=1/2.

Finally the answer is maximum p(getting a red ball)=1/2

Given a collection of points P in the plane, a 1-set is a point in P that can be separated from the rest by a line; i.e. the point lies on one side of the line while the others lie on the other side. The number of 1-sets of P is denoted by n1(P). The maximum value of n1(P) over all configurations P of 10 points in the plane is

* 
* 10
* 
* 9
* 
* 3
* 
* 5

Ferrari S.p.A. is an Italian sports car manufacturer based in Maranello, Italy. Founded by Enzo Ferrari in 1928 as Scuderia Ferrari, the company sponsored drivers and manufactured race cars before moving into production of street-legal vehicles in 1947 as Ferrari S.p.A.. Throughout its history, the company has been noted for its continued participation in racing, especially in Formula One, where it has enjoyed great success. Rohit once bought a Ferrari. It could go 2 times as fast as Mohit's old Mercedes. If the speed of Mohit's Mercedes is 32 km/hr and the distance travelled by the Ferrari is 952 km, find the total time taken in hours for Rohit to drive that distance.

* 
* 15.88
* 
* 476
* 
* 29.75
* 
* 14.88

A hare and a tortoise have a race along a circle of 100 yards diameter. The tortoise goes in one direction and the hare in the other. The hare starts after the tortoise has covered 1/5 of its distance and that too leisurely. The hare and tortoise meet when the hare has covered only 1/8 of the distance. By what factor should the hare increase its speed so as to tie the race?

* 
* 8
* 
* 37.80
* 
* 5
* 
* 40

Ans: A hare and a tortoise have a race along a circle of 100 yards diameter. The tortoise goes in one direction and the hare in the other. The hare starts after the tortoise has already covered 1/5 of the distance of the race, and even then the hare runs at too leisurely a pace. The hare and tortoise meet when the hare has covered only 1/8 of the distance that it must race. By what factor should the hare increase its speed so as to tie the race.  
  
A. 37.80  
  
I don't have a pi symbol so I shall call pi "TT"  
The circle circumference is given by the formula 2TTr or in other words (TT x diameter) = 100 TT yards. Therefore this is the length of the race.  
  
The tortoise has a 100 TT / 5 = 20 TT head start  
The hare sets off leisurely and gets 1/8 of the way round ie 1/8 x 100 TT = 12.5 TT yards when he meets the tortoise. Therefore by the time he has dawdled 12.5 TT yards, the tortoise has only to go another 12.5TT yards to finish. In other words as he has only 12.5 yards to go he must have travelled 100 TT - 12.5 TT yards = 87.5 TTyards. However, as he had a 20 TT yard head start, he has travelled 87.5 TT - 20 TT = 67.5 TT yards in the same time as the hare has gone 12.5 TT yards. Therefore just to go at the same speed as the tortoise, the hare must increase his pace by a factor of 67.5/12.5 = 5.4  
  
Then on top of this, the tortoise only has 12.5 TT yards to the finish, whilst the hare has 87.5 TT yards to go. Therefore the hare must increase his pace by a factor of 87.5 / 12.5 = 7 to allow for the larger distance to go.  
  
Therefore to tie the race he must increase his pace by a factor of 5.4 x 7 = 37.80