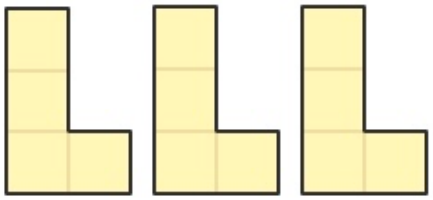
100 Aplusclick Brainteasers 2025

1. In a circle of 24 children, 23 of them hold a girl by the hand, and 19 of them hold a boy by the hand.

How many girls are there?

Answer: aplusclick.org/t.htm?q=17815

2. Put the three identical L-shapes together to make a symmetrical shape.

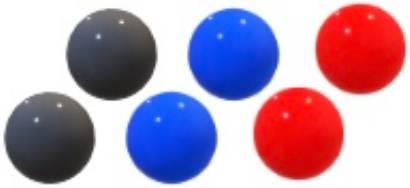


How many different ways are there to make a shape with mirror symmetry using all three L-shapes?

NOTE: It is allowed to flip any number of the L-shapes over, so the top face goes underneath.

Answer: aplusclick.org/t.htm?q=17812

3. There are 2 black balls, 2 blue balls, and 2 red balls on a regular hexagonal table. A teacher places them in corners of the table.



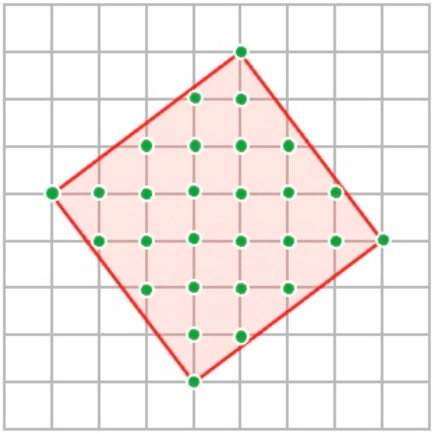
Blackie says, “The blue and red balls are between the **two black balls.**”
Blu says "The black and red balls are between the **two blue balls**".
Red says "The black and blue balls are between the **two red balls**".

What is the maximum number of children who could be telling the truth?

Answer: aplusclick.org/t.htm?q=17794

4. A 5x5 square was thrown onto paper with a 1x1 grid. It covers 28 grid nodes.

What is the smallest possible number of nodes that can be covered by the square?

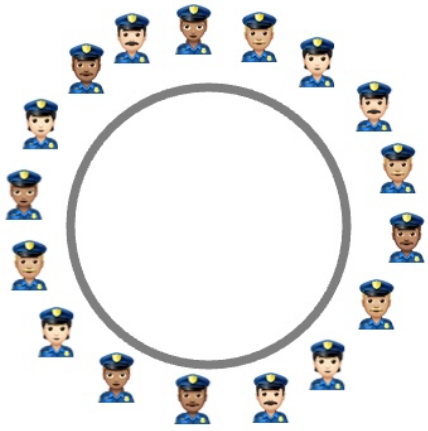


Answer: aplusclick.org/t.htm?q=17789

5. On a circular road seventeen police officers are on a special mission. Two neighboring policemen are 1 km apart along the road.

They have badges numbered from 1 to 17, and they remain in that order clockwise. Their captain orders them to change their positions so that the order of the badges becomes from 1 to 17 anti-clockwise.

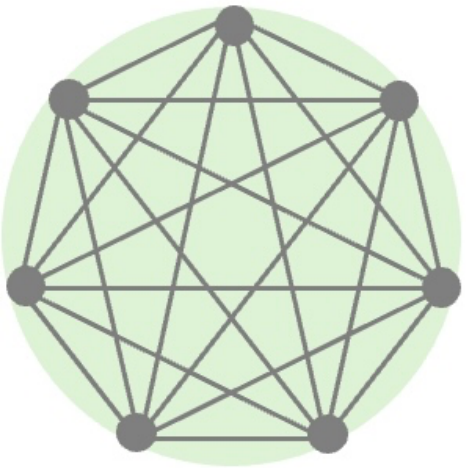
What is the shortest total distance they must walk along the road to do this?



Answer: aplusclick.org/t.htm?q=17783

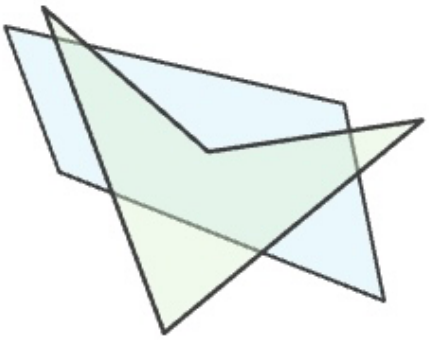
6. On an island, seven airports are connected by routes, each served by a single airline company. To avoid a monopoly, the government gives the routes to several companies so that a person cannot fly between all seven airports using a single company.

What is the smallest possible number of the airline companies?



Answer: aplusclick.org/t.htm?q=17776

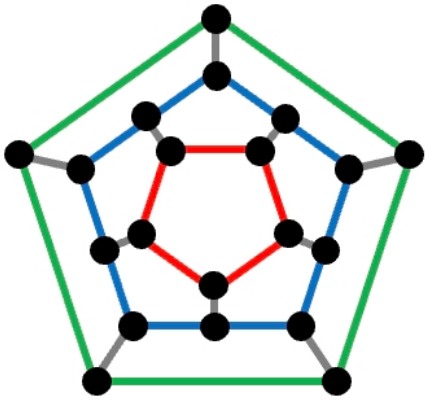
7. The picture show shows an example of intersection of two quadrilaterals. Their sides intersect in 6 points.



What is the largest possible number of points of intersection of sides of two quadrilaterals?

Answer: aplusclick.org/t.htm?q=17771

8. The picture shows a plan of a castle with three circles of defense. Twenty black towers are connected by red, blue, and green walls, and gray (grey) passages. Every evening, the captain begins his journey in the north tower, walks along the walls and passages, visiting each tower only once, never passing the same wall twice, and returns to the north tower.

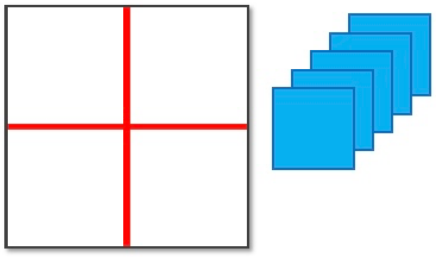


What is the maximum number of blue walls he can pass?

The question is inspired by the icosian game which is a mathematical game invented in 1856 by Irish mathematician William Rowan Hamilton. It involves finding a Hamiltonian cycle on a dodecahedron.

Answer: aplusclick.org/t.htm?q=17770

9. Place as many blue squares as possible on the flag with a red cross.

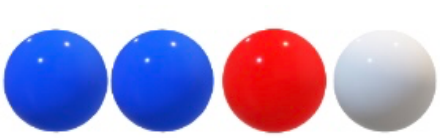


The squares don't overlap, but can touch each other. Each square should go over two of the four arms of the red cross.

What is the largest possible number of squares that you can place on the flag?

Answer: aplusclick.org/t.htm?q=17767

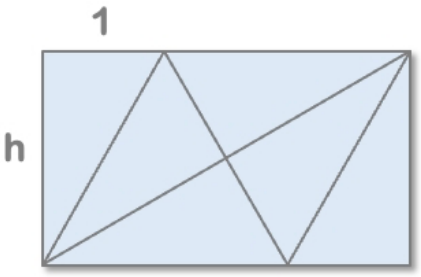
10. There are 4 otherwise identical balls in a box.



What is the probability that three randomly chosen balls all have different colors?

Answer: aplusclick.org/t.htm?q=17765

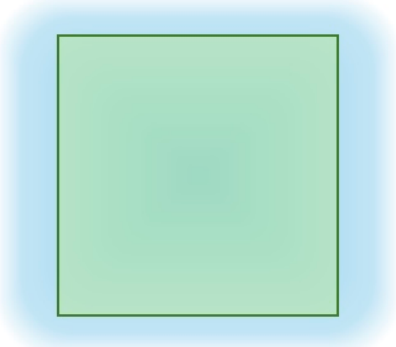
11. A rectangle is formed from six congruent triangles one side of which is 1 cm.



Find the height of the rectangle h.

Answer: aplusclick.org/t.htm?q=17760

12. There is a chest buried in each 1x1 meter piece of Square Island's land. One chest contains a treasure, the other 99 chests contain notes indicating the distance to the chest with the treasure.



How many holes do you need to dig to take the treasure with you from the island?

Answer: aplusclick.org/t.htm?q=17758

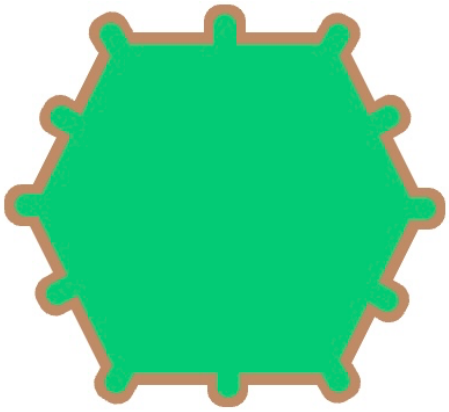
13. Jane and Gerry bought an used car for $5,000. Jane contribution's was $3,000 and Gerry's $2,000.

They equally used it for two years.
Then they sold it for $1,000.

How much money should Gerry obtain?

Answer: aplusclick.org/t.htm?q=17756

14. On Hexagon island, sportsmen play billiards on a hexagonal table with 12 pockets located at the corners and in the middle of its sides.

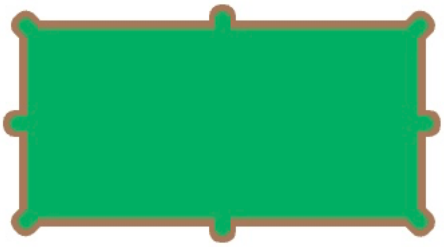


Place 4 balls on such a table.

What is the largest possible number of pockets that can be aligned with at least two balls?

Answer: aplusclick.org/t.htm?q=17748

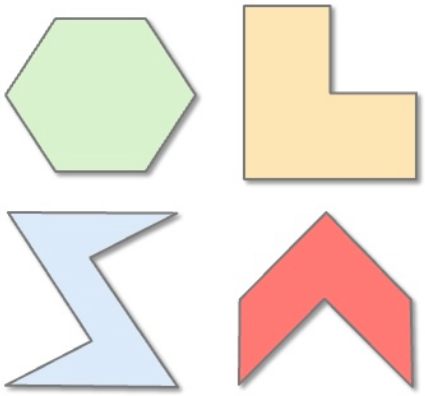
15. Place several balls on a standard 9x4.5 ft billiard table with pockets located at the corners and in the middle of its sides so that each pocket is aligned with at least two balls.



What is the smallest possible number of balls?

Answer: aplusclick.org/t.htm?q=17745

16. Choose one of the hexagons. Draw a line that connects two of its vertexes. Cut the polygon along the line to obtain two pentagons.

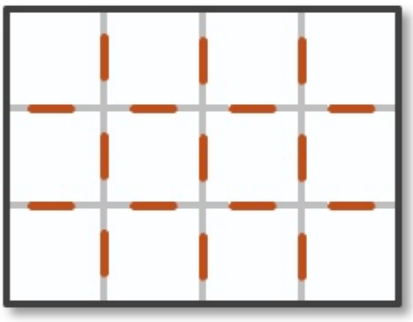


Which hexagon do you choose?

Answer: aplusclick.org/t.htm?q=17743

17. The upper floor of a castle has 12 rooms. There is a door between each two adjacent rooms, but all the doors are currently locked.

What is the smallest number of doors that need to be opened so that a cat sitting in one of the rooms can walk around all the rooms?



Answer: aplusclick.org/t.htm?q=17739

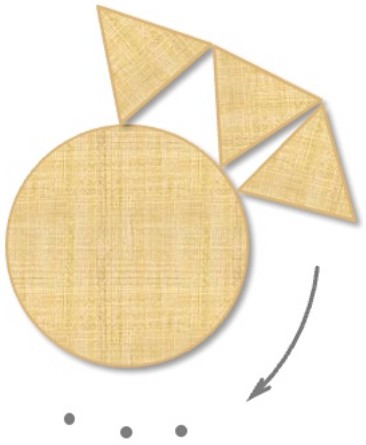
18. The code of the old lock is 4 different digits. The lock will open if at least one of the digits is correct.

How many tries do you need to open the lock if luck is not on your side?

Answer: aplusclick.org/t.htm?q=17724

19. Jane cuts a circle with a radius of 10 feet and equilateral triangles with the side lengths of 10 feet from a large sheet of cardboard. She puts the triangles around the circle so that their vertexes touch the circle and vertexes of the neighboring triangles as the picture shows.

How many triangles does she use?



Answer: aplusclick.org/t.htm?q=17710

20. Jane is searching for mushrooms in a forest. She starts from a big oak tree and walks 1 meter (m) south, 2 m west, 3 m north, 4 m east, 5 m south, 6 m west, 7 m north, 8 m east, and so on.

After walking a total of 5,000 meters, her basket is full of mushrooms.

How far from the tree is she now?

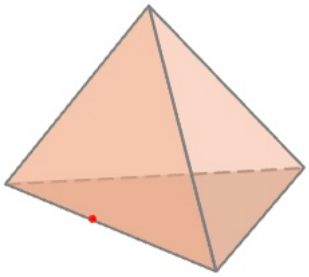
Answer: aplusclick.org/t.htm?q=17705

21. Three teenage friends are watching the sunset through a window of a cottage (chalet) in Swiss mountains. Two hours later, half a dozen teenagers join them, and they look out the window again.

How many teenagers are watching the sunset now?

Answer: aplusclick.org/t.htm?q=17701

22. A regular tetrahedron is a tetrahedron (triangular pyramid) in which all four faces are equilateral triangles.



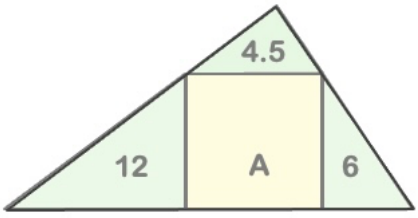
A mountain has a shape of a regular tetrahedron with the side length of 4,000 meters.

Gerry walked around the pyramid from the midpoint of one of the base sides, visiting all three above-ground faces, and returning to his original starting place.

Estimate the shortest possible length of his path.

Answer: aplusclick.org/t.htm?q=17699

23. The numbers show the areas of the corresponding triangles.



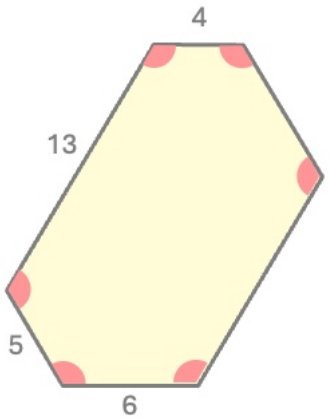
Find the area of the yellow square.

Answer: aplusclick.org/t.htm?q=17697

24. All angles of the hexagon are the same.

The numbers show the lengths of four sides of the hexagon in cm.

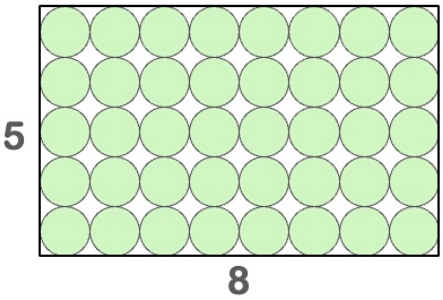
Find its perimeter.



Answer: aplusclick.org/t.htm?q=17693

25. I put 40 pencils with a diameter of 1 cm into an 8x5 cm box.

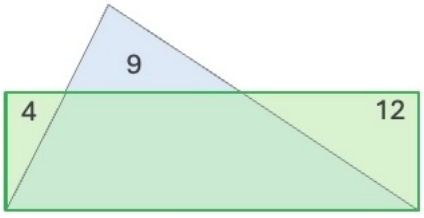
What is the largest number of pencils that can be placed into the box?



Answer: aplusclick.org/t.htm?q=17688

26. The number show the areas of corresponding triangles in square cm.

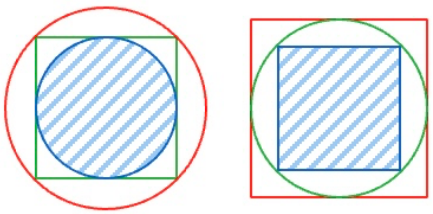
Find the area of the green rectangle.



Answer: aplusclick.org/t.htm?q=17681

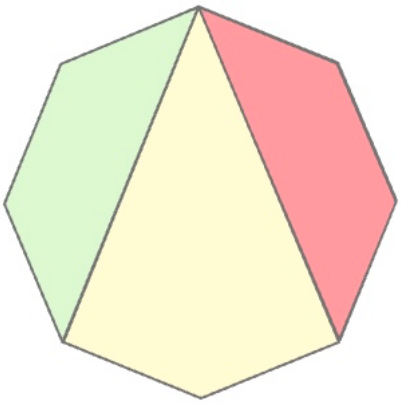
27. The red circle and red square have the same area.

Which blue shape has the larger area?



Answer: aplusclick.org/t.htm?q=17674

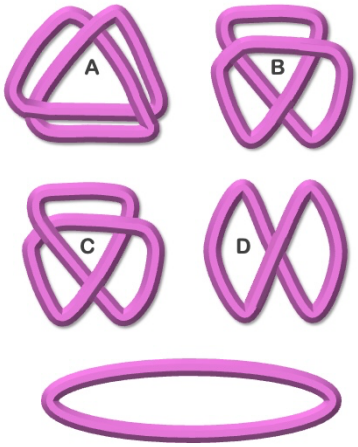
28. Knight Octienne's shield is a regular octagon.



Estimate the ratio (yellow area) / (green area) of the shield.

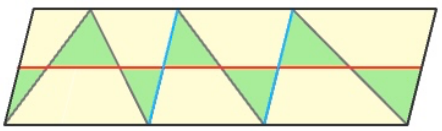
Answer: aplusclick.org/t.htm?q=17668

29. How many of the four cords A, B, C, and D can be extended into a ring without knots?



Answer: aplusclick.org/t.htm?q=17649

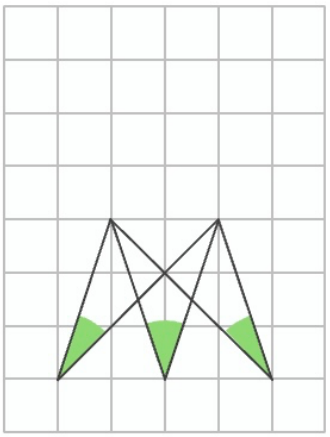
30. In a parallelogram, the red line connects two midpoints of two opposite sides and blue lines are parallel to the two sides.



What is the ratio of yellow to green areas?

Answer: aplusclick.org/t.htm?q=17646

31. Find the sum of green angles on the 1-foot square grid.



Answer: aplusclick.org/t.htm?q=17639

32. A floor of a large hall is covered with six-sided and three-sided tiles as the picture shows.

Estimate the ratio (light area) / (dark area) for the floor.

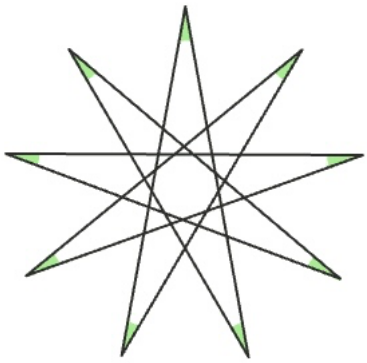
Answer: aplusclick.org/t.htm?q=17638

33. A school is considering several designs for its flag.
The triangular flag consists of alternating blue and white horizontal stripes of equal height.

What is the ratio of blue and white areas for a flag with 11 stripes?

Answer: aplusclick.org/t.htm?q=17623

34. Find the sum of nine green angles.

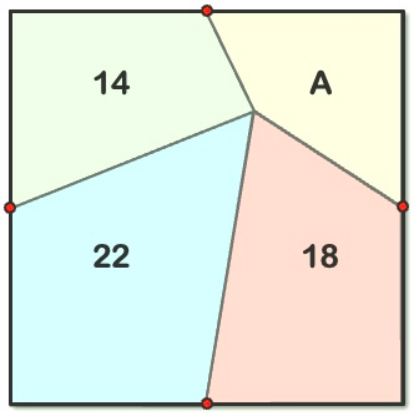


Answer: aplusclick.org/t.htm?q=17621

35. Four red point are midpoints of the corresponding sides of a square.

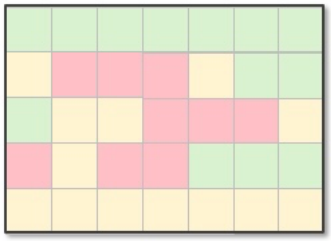
The numbers show the areas of three quadrilaterals.

Find the area of the yellow quadrilateral, A.



Answer: aplusclick.org/t.htm?q=17619

36. In an upcoming election, each block votes for the green party, the yellow party, or the red party as shown in the picture. The region is to be divided into 5 districts of 7 connected blocks. For each district, the party with the most number of votes wins the district. Then the party who wins the most number of districts wins the election. No ties allowed in any districts.



Which party is able to win the election?

Answer: aplusclick.org/t.htm?q=17611

37. Statistics of the International Labour Organization (ILO) shows that in 2025 people work on average 45 hours per week in such countries as China or India, and 32 hours in European countries.

How many more hours per year, on average, do people work in China or India than in Europe?

Answer: aplusclick.org/t.htm?q=17594

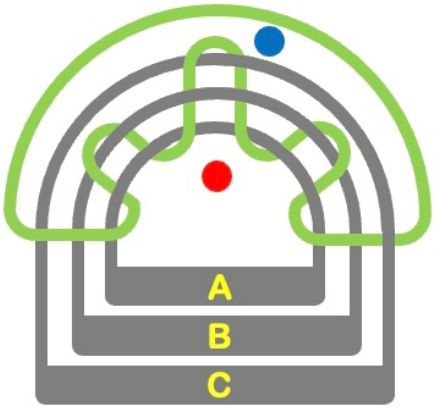
38. I give you a pile of 100 gold coins.

You have to break it into 100 piles with one coin each step by step. It is allowed to break any of the available piles into two piles for a step. If the numbers of coins in the two new piles are different, a fine of one coin is paid at the end of the game.

What is the largest number of the coins that you can keep for yourself?

Answer: aplusclick.org/t.htm?q=17582

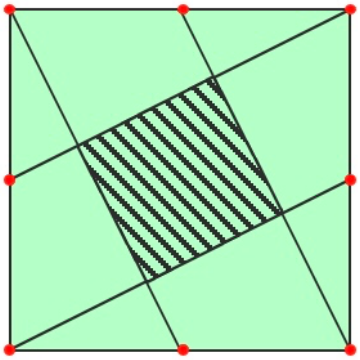
39. I attached the frame of my bike (red circle) to a lamppost (blue circle) with a green flexible cable and three locks. I want to take my bike. I don't need the green cable.



Which lock should I open to separate my bike and the lamppost?

Answer: aplusclick.org/t.htm?q=17577

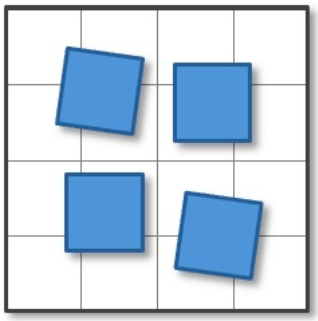
40. Jane placed red poles at the corners and in the middle of the corresponding sides of a 10x10 meter square piece of land. She connected the poles with ropes as shown in the picture.



What is the area of the marked central square?

Answer: aplusclick.org/t.htm?q=17572

41. Gerry places four blue 1x1 tokens on a 4x4 board so that there is no space for an additional token wholly inside the board outline and not overlapping with any other token.



What is the smallest number of tokens that are needed for a 5x5 board?

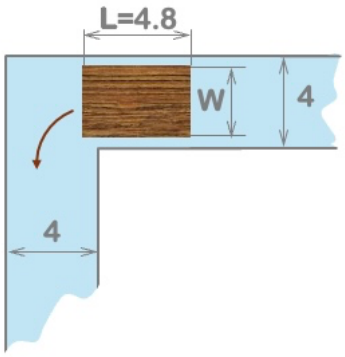
Answer: aplusclick.org/t.htm?q=17567

42. Cut the star into several triangles.

Which is the smallest possible number of triangles?

Answer: aplusclick.org/t.htm?q=17544

43. A raft must pass through a right-angled corner of a 4-meter-wide channel.



What is the largest possible width of the raft if its length L is 4.8 meters?

Answer: aplusclick.org/t.htm?q=17540

44. Four knights participate in the final stage of a tournament.

Some of them are black knights. A black knight masks his identity by an invented name.

The four knights know the real names of the other knights.
To avoid revealing their identity the black knights tell the wrong number of black knights. The other knights tell the correct number.

When the king asks them
"How many black knights are in the final stage?",
they give the following answers:
One. Two. Three. Four.

How many black knights are there?

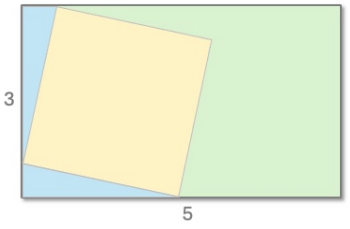
Answer: aplusclick.org/t.htm?q=17523

45. You have a standard 297x210 mm piece of paper and no other instruments.

What is the smallest number of times that you fold the paper to trisect (to divide into three equal parts) one of its right angles?

Answer: aplusclick.org/t.htm?q=17521

46. The standard flag of an island has dimensions 3 x 5 ft. The side length of the yellow square in the flag is 2.5 ft.

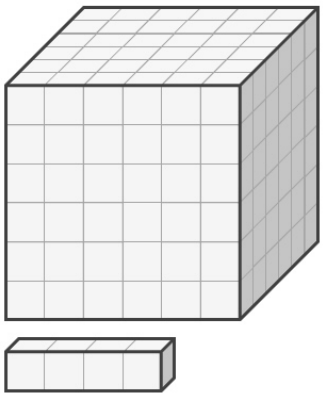


What is the area of the green part of the flag?

Answer: aplusclick.org/t.htm?q=17508

47. Can you pack 53 bricks of dimensions 1x1x4 into a 6x6x6 box?

Author: Unknown

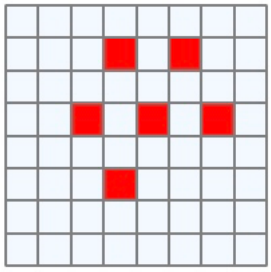


Answer: aplusclick.org/t.htm?q=17506

48. Every day an infection (red squares) spreads among the squares as follows: if a square has two or more infected neighbors, it becomes infected itself. Each square has 4 neighbors via common sides.

Today, 6 squares are infected.

How long will the infection spread?



Answer: aplusclick.org/t.htm?q=17505

49. There are N students in a class.

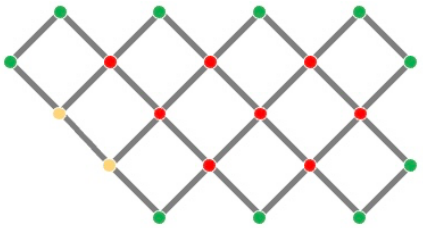
Can you find at least two students in the class with the same number of friends?

Note: *The friendships are symmetric: if Anthony is a friend of Bethany, then Bethany is a friend of Anthony.*

Answer: aplusclick.org/t.htm?q=17503

50. The picture shows a map of a pedestrian zone in a city, where the gray line segments between the intersections are the streets.

From which street intersection should Gerry start in order to be able to visit each street exactly once?



Answer: aplusclick.org/t.htm?q=17498

51. In a year 8 class, several girls (including Jane) have long hair.

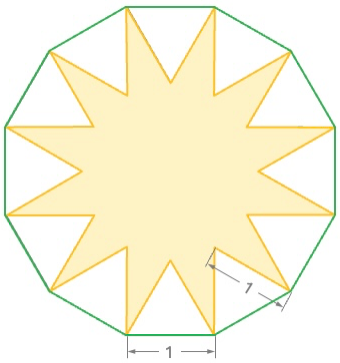
If Jane leaves the class then the percent of girls with long hair will be 25%.

If she stays in the class and cuts her hair short, then the percent of girls with long hair will be 24%.

How many girls with long hair are there in the class now?

Answer: aplusclick.org/t.htm?q=17483

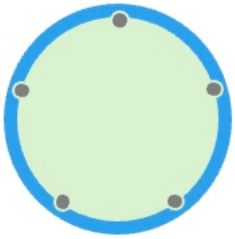
52. The green regular dodecagon and the yellow star inside it both have a side length of 1 cm.



What is the area of the yellow star?

Answer: aplusclick.org/t.htm?q=17479

53. The five ports on Circle Island must be connected, directly or indirectly, by roads.

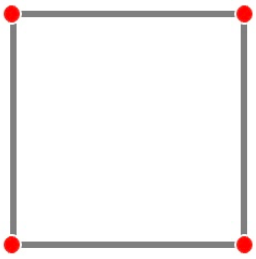


The line-of-sight distance between two neighbouring ports is 10 miles.

What is the smallest possible length of the roads?

Answer: aplusclick.org/t.htm?q=17474

54. Five squares are drawn such that no two squares have a common side. All vertices of these squares were marked in red.

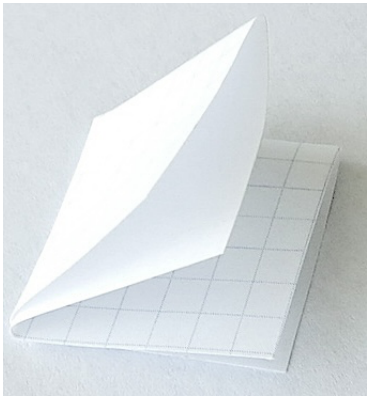


What is the smallest number of red points in the square arrangement?

Answer: aplusclick.org/t.htm?q=17463

55. Jane folds a piece of paper in half, creating two layers of paper. She folds the paper in half again, creating a total of four layers of paper. She folds the paper 7 times in total. Then she cuts off its four corners.

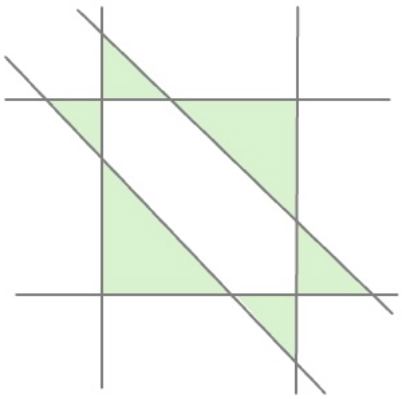
How many holes does the unfolded piece of paper have?



Answer: aplusclick.org/t.htm?q=17440

56. I draw six straight lines to form six triangular zones shown in green.

What is the largest possible number of triangular zones that can be created by six straight lines?

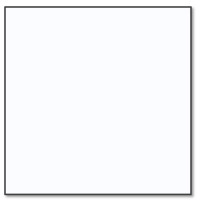


Answer: aplusclick.org/t.htm?q=17428

57. An acute triangle is a triangle in which all the three interior angles are less than 90°.

Break a square into acute triangles.

What is the smallest possible number of the triangles?

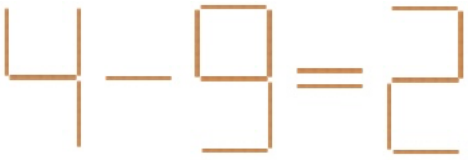


Answer: aplusclick.org/t.htm?q=17423

58. Wooden sticks form an equality on a white table.

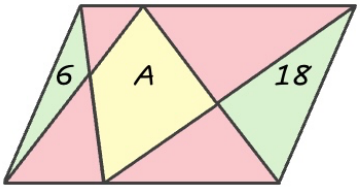
Move one stick to make the equality correct.

From which number do you choose the stick?



Answer: aplusclick.org/t.htm?q=17387

59. Two green triangles in a parallelogram have areas of 6 and 18 square units.



What is the area of the yellow quadrilateral, A?

Answer: aplusclick.org/t.htm?q=17386

60. What is the number of the parking spot covered by the red truck?

Answer: aplusclick.org/t.htm?q=17381

61. Move several matchsticks to make the equality correct.

What is the smallest number of matchsticks to move?

Answer: aplusclick.org/t.htm?q=17377

62. An FBI agent, Steve, installs seven ceiling microphones in a square room.

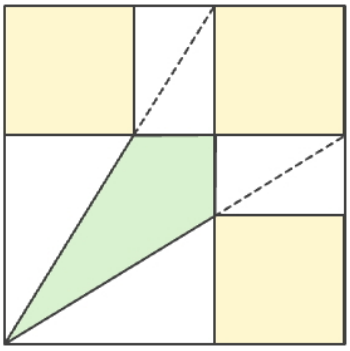
The radius of action (sensitivity) of a mic is 2 meters (in the plan view of the room).

What is the largest possible area of the square room given that it has complete coverage by the seven mics?

Answer: aplusclick.org/t.htm?q=17366

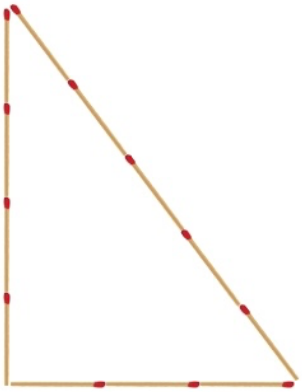
63. Three yellow squares with the area of 90 cm^2 each are in the corners of the larger square.

Find the area of the green quadrilateral.



Answer: aplusclick.org/t.htm?q=17362

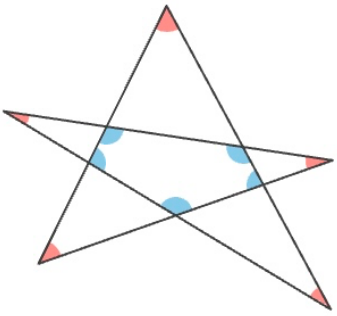
64. What is the least number of matchsticks that you need to move in order to create a shape with half the area?



Answer: aplusclick.org/t.htm?q=17352

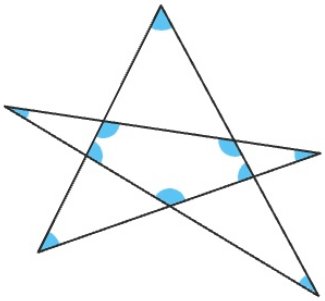
65. How many times does the sum of the blue angles exceed the sum of the red angles?

To be clear we require the ratio (sum of blue angles)/(sum of red angles).



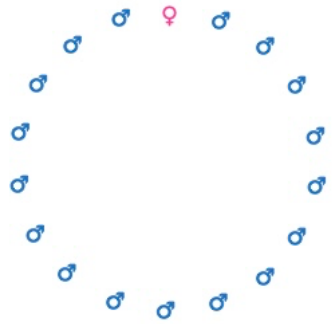
Answer: aplusclick.org/t.htm?q=17350

66. What is the least number of the marked angles that must be known in order to be able to find the values of the other marked angles?



Answer: aplusclick.org/t.htm?q=17348

67. There are 17 men and one woman in the astronaut training team.

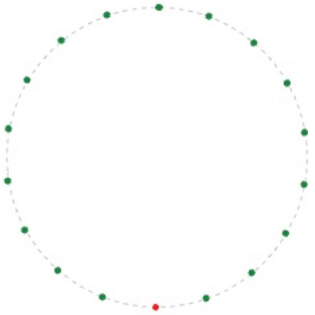


Their manager counts all possible groups with 2 or more astronauts.

What is the difference between the number of groups with the woman, W, and the number of groups without her, M?

Answer: aplusclick.org/t.htm?q=17338

68. There are 17 green points and one red point on a circle.

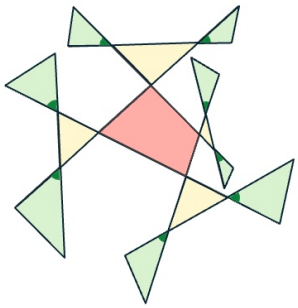


I draw as many different convex polygons with the vertexes in the points as possible.

Are there more polygons with the vertexes in green points or polygons that include the red point?

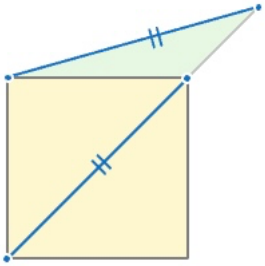
Answer: aplusclick.org/t.htm?q=17337

69. Find the sum of the marked green angles.



Answer: aplusclick.org/t.htm?q=17326

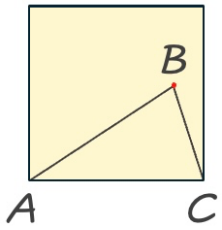
70. The picture shows a yellow square.
Two blue line segments have the same length.



Find the largest angle in the green triangle.

Answer: aplusclick.org/t.htm?q=17323

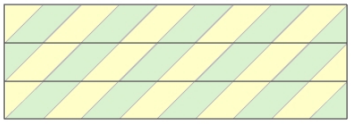
71. A point B is randomly chosen inside the square.



Estimate the probability that the triangle ABC is acute-angled.

Answer: aplusclick.org/t.htm?q=17319

72. Three pieces of paper form a rectangle in which a green stripe follows a yellow stripe. I want that a green stripe goes first.



What is the smallest number of pieces I should move to change the order of the stripes?

Answer: aplusclick.org/t.htm?q=17316

73. Annie, Betty, and Christy visit their grandma during the summer holidays.

Annie stays 3 days, then she is absent for 3 days, then she comes again.

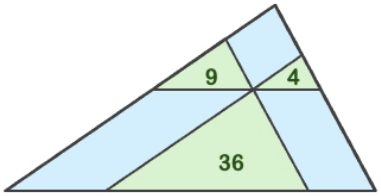
Betty stays 4 days, then she is absent for 4 days, then she comes again.

Christy stays 5 days, then she is absent for 5 days, then she comes again.

If all the three granddaughters come on July 1st, how many days in July does their grandma stay in her cottage alone?

Answer: aplusclick.org/t.htm?q=17314

74. In a large triangle, three green triangles are formed by drawing three lines that are parallel to the sides of the large triangle.

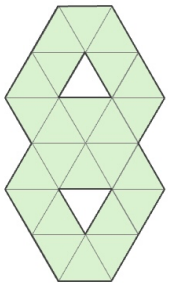


The numbers show the corresponding areas.

Find the sum of the areas of the three blue parallelograms.

Answer: aplusclick.org/t.htm?q=17307

75. Cut the shape into two pieces to form a six-sided regular polygon - hexagon.



How many sides does a piece have?

The question is similar to a question from Kvantik Magazine, 2025, N 3.

Answer: aplusclick.org/t.htm?q=17306

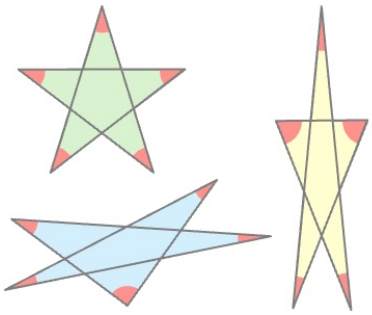
76. Gerry plants trees in a 82x82 foot square garden.

The distance between the trees must be at least 10 feet.

Estimate the largest possible number of trees in the garden.

Answer: aplusclick.org/t.htm?q=17299

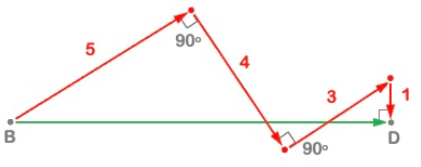
77. For which of the stars is the sum of the five marked angles the largest?



Answer: aplusclick.org/t.htm?q=17298

78. Griffin and Redd went from a bus stop to Daisy's house.

Griffin went directly to the house.
Redd turned twice by 90°, then after a while he realised he was only 1 km from her house.

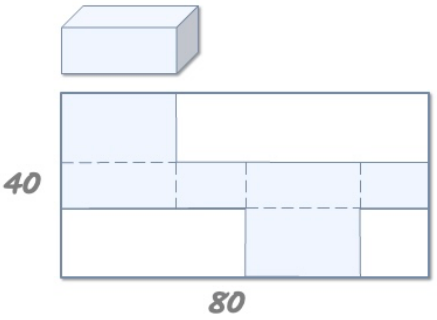


The picture shows the two paths and the distances in km.

Estimate the length of Griffin's route, shown in green.

Answer: aplusclick.org/t.htm?q=17289

79. The diagram illustrates a net of an unfolded rectangular box.



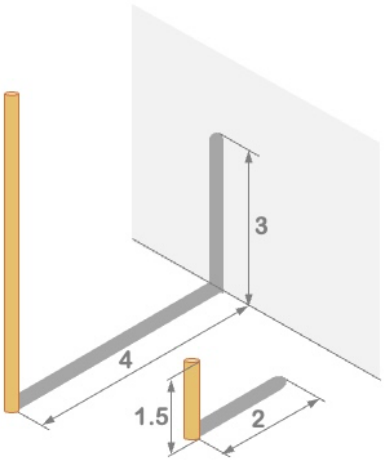
We cut the net from an 80x40 cm piece of cardboard.

The sum of the length, width, and height of the box is 50 cm.

What is the length of the box?

Answer: aplusclick.org/t.htm?q=17279

80. Two vertical sticks cast shadows from the sun on the ground and a vertical wall as shown in the figure. All the sizes are in feet.

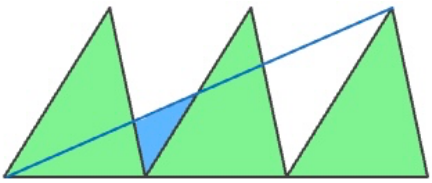


What is the length of the taller stick?

The question is similar to a problem from StackExchange Mathematics Forum

Answer: aplusclick.org/t.htm?q=17274

81. Each of the three identical green triangles with aligned bases has an area of 120 square feet.



What is the area of the blue triangle?

Answer: aplusclick.org/t.htm?q=17266

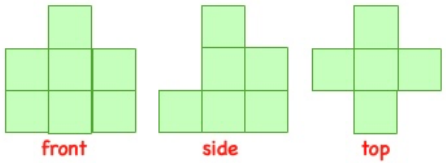
82. John places several cube-like wooden boxes into his truck.

The picture shows the side, back, and top views of his truck with boxes.

How many boxes are there in the truck?

Answer: aplusclick.org/t.htm?q=17244

83. The picture shows the front, side, and top views of a set of small green cubes.



How many small cubes are there?

Answer: aplusclick.org/t.htm?q=17241

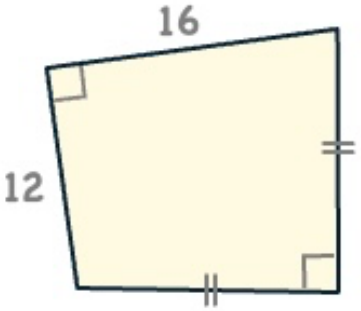
84. In one day, a craftsman can make 30 arrows or fletch (put the feathers on) 20 arrows.

How many arrows can the craftsman both make and fletch in a day?

From a Chinese mathematical collection of the second century BC

Answer: aplusclick.org/t.htm?q=17240

85. In a quadrilateral, two angles are 90°, two sides have the same length, and two other sides have the lengths of 12 and 16 cm.



What is the area of the quadrilateral?

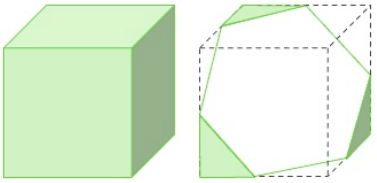
Answer: aplusclick.org/t.htm?q=17237

86. You have a rectangular piece of paper and nothing else. You can only fold it in halves or through exact visible points. You cannot guess the place of a crease.

What is the smallest number of folds needed to form three equal parts?

Answer: aplusclick.org/t.htm?q=17234

87. A white cube was painted green.

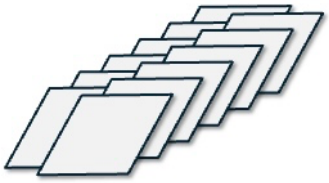


We cut off a part of the cube through the centers of the edges.

Which is the fraction of the green areas of the new shape compared to the original cube?

Answer: aplusclick.org/t.htm?q=17233

88. I have 12 rhombus-like tiles. The length of the smaller diagonal of the rhombus is the same as its side length.

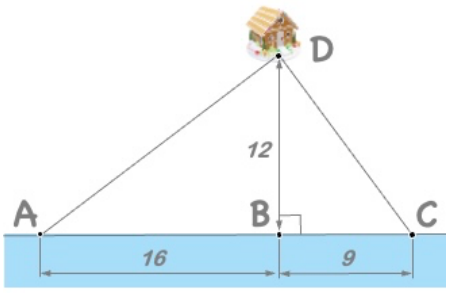


I want to form a figure from them with the smallest possible perimeter.

How much is the sum of perimeters of 12 tiles greater than the perimeter of the figure?

Answer: aplusclick.org/t.htm?q=17227

89. Three boys Ardy, Bardy, and Cardy are near the Straight River. The numbers show the corresponding distances in miles. They start walking to Daizy's house at the same time by the shortest paths.

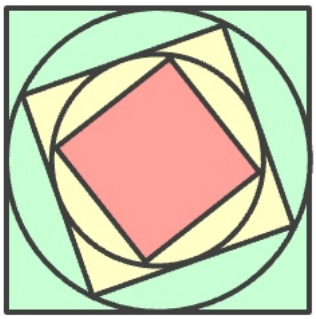


They walk at different speeds:
Ardy walks 1 ⅔ miles,
Bardy walks 1 mile, and
Cardy walks 1 ¼ miles
for the same period of time.

Who will reach Daizy's house first?

Answer: aplusclick.org/t.htm?q=17226

90. Estimate how many times is the green area greater than the area of the red square.



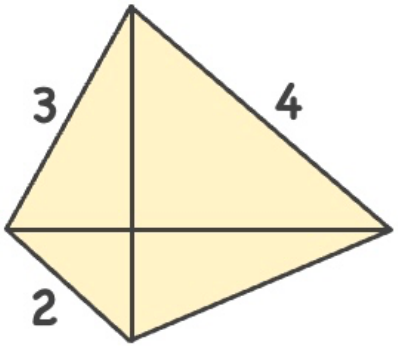
Answer: aplusclick.org/t.htm?q=17217

91. If you randomly break a stick into three pieces, what's the probability that they can form a triangle?

Answer: aplusclick.org/t.htm?q=17205

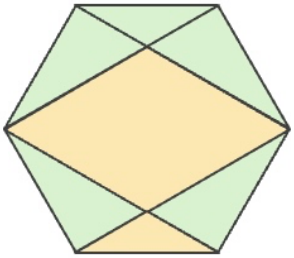
92. The diagonals of the quadrilateral are perpendicular. The numbers show the lengths of three of its sides.

Which is the length of the fourth side of the quadrilateral?



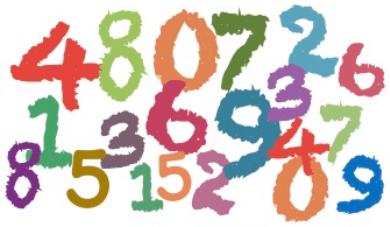
Answer: aplusclick.org/t.htm?q=17204

93. Which area of the regular hexagon is larger?



Answer: aplusclick.org/t.htm?q=17202

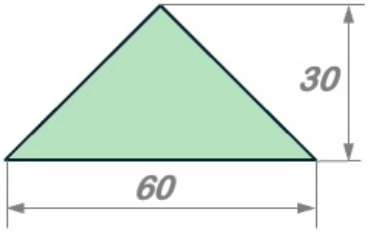
94. The numbers from 1 to 2048 are placed clockwise on a circle. We move around the circle clockwise erasing every other number until only one number remains.



If we start by erasing 1, what is the last remaining number on the circle?

Answer: aplusclick.org/t.htm?q=17200

95. Jane and Gerry bought a triangular plot of land. The picture shows the dimensions of the isosceles triangle in meters.

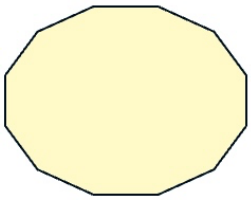


They want to build a square house on the land.

What is the largest possible side length of the square house?

Answer: aplusclick.org/t.htm?q=17178

96. What is the largest number of right angles (90°) that can be formed by two sides of a 12-sided polygon (dodecagon)?



Consider all right angles formed by any two dodecagon's sides, which can intersect.

Answer: aplusclick.org/t.htm?q=17169

97. A company installs security cameras with the horizontal field of view of 90 degrees on walls of a rectangular building.

Which is the least number of cameras needed to guarantee that everything external to the building is visible by one of the cameras?

Answer: aplusclick.org/t.htm?q=17141

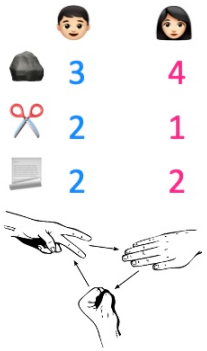
98. Jane owns a round meadow and a goat named Snowflake. Snowflake is tied to a post in the center of the meadow. At the start of each new day, Jane wants to allow Snowflake access to the same area of new grass as on previous days. Jane increases the length of the tether everyday and it is 10 meters on the tenth day.

Estimate the length of the tether on the fifth day.

Answer: aplusclick.org/t.htm?q=17128

99. Gerry and Jane played rock-paper-scissors 7 times.

Just to remind you of the rules:
rock beats scissors,
scissors beat paper,
paper beats rock.



Altogether Gerry played rock three times, scissors twice, and paper also twice,
and Jane played rock four times, scissors once, and paper twice, not necessarily in that order.
There were no ties.

Who won?

Answer: aplusclick.org/t.htm?q=17120

100. Twenty people with excellent shooting records have a friendly meeting in a saloon. Exactly at midnight, each of them makes only one shot and successfully kills the nearest guy.

What is the greatest possible number of criminals that can leave the saloon alive after the shooting?

Answer: aplusclick.org/t.htm?q=17114