

9/1

If a ball bounces 0.8 of the distance it falls, how many bounces will a ball make before it rises to less than 1 metre if it is originally dropped from 6 metres?

Attempts

1

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9/2

An open box is constructed by starting with a rectangular sheet of metal 10cm by 14cm. Pieces are cut out of each corner so that when the sides are folded up the box will be 1.5cm deep. What is the volume of the box in cm^3 ?

Attempts

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9/3

Twenty people at a gathering all shake hands with each other.
How many handshakes will occur for everyone to meet each other?

Attempts

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9/4

A farmer has a herd of n cows and divides them up between his four sons as follows. The oldest son receives $\frac{1}{2}$ of the herd, the second eldest receives $\frac{1}{4}$ of the herd, the third son receives $\frac{1}{5}$ of the herd and the youngest son receives seven cows.
How many cows are there in the herd?

Attempts

1

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9/5

Two boys each have a different number of Smurfs. One boy says "If you give me 5 of yours, I'll have as many as you". The other boy says "If you give me 5, I'll have twice as many as you".
How many Smurfs does each boy have?

Attempts

1	2	3	4	5

9/6

Two consecutive prime numbers have a product of 899.
What are the two prime numbers?

Attempts

1	2	3	4	5

9/7

Six consecutive multiples of 5 add to make a sum between 340 and 350.
What is the lowest of the six numbers?

Attempts

1

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9/8

A man makes a trip by car and travels at an average speed of 50kph. He returns over the same route at an average speed of 45kph.
To two decimal places, what is the man's average speed in kph?

Attempts

1

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9/9

At a Dog training exercise there are both people and dogs. Counting heads I get 22. Counting legs I get 68.

How many people are there at the Dog training exercise?

Attempts

1

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9/10

Balls are stacked in compact equilateral triangles such that the bottom layer has 15 balls on one side of the equilateral triangle. The second layer has 14 on one side and the top layer has 1 ball.

How many balls are there in the stack?

Attempts

1

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3

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9/11

There are 10 points evenly spaced about the circumference of a circle. These points are to be connected by lines. Within the circle, no two lines may intersect each other.

What is the maximum number of lines that can be drawn in the circle.

Attempts

1

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3

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9/12

Think of a number. Add 12. Multiply this answer by 4. Subtract 38 from this answer. Divide this answer by 2.

Write two additional steps so that you get back to the original number.

Attempts

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3

4

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9/13

A father has three sons whose ages are equally spread. At the present time the fathers age is the sum of his sons ages. Five years ago the sum of the three boys ages was half their fathers present age, and the eldest son was four times older than his youngest brother.
How old are the three sons now?

Attempts

1

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9/14

A shopkeeper marks his goods for sale at a price which is 40% more than the price he paid for them. On SALE DAY customers are given a discount of 25% on the marked price. What percentage profit does the shopkeeper make on the goods which are sold on SALE DAY?.

Attempts

1

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9/15

The favourite game of students in Maths World is based on Rugby. In their version of the game, a try is worth 8 points, with the possibility of scoring another 2 points each time a try is scored. A drop goal worth 5 points can be kicked at any time.

What is the largest score that cannot be made?

Attempts

1	2	3	4	5

9/16

A palindrome number is one that reads the same in both directions (e.g.23432). Find the number of palindromes less than 1000. Include only 2 or 3 digit palindromes.

Attempts

1	2	3	4	5

9/17

If a and b are positive integers less than or equal to 100, and $a \neq b$, find the value of a which will make the following expression as large as possible.

$$\frac{\frac{1}{a} + \frac{1}{b}}{\frac{1}{a} - \frac{1}{b}}$$

Attempts

1

2

3

4

5

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9/18

I think of a number. Sixty percent of the number is the same as $\frac{4}{5}$ of the number minus 12.

What is the number?

Attempts

1

2

3

4

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9/19

Find a four digit number $abcd$ such that if a decimal place is put between the b and the c , the resulting number is the average of ab and cd . The digits a , b , c and d must all be different.

Attempts

1	2	3	4	5

9/20

A class of 28 students are arranged in a circle. The students are then numbered off from 1 through to 28. The teacher starts at a random point around the circle, and then eliminates every third student, continuing around and around until only two students remain. They are students 8 and 18.

Which student was the first to be eliminated?

There are two different solutions depending on the direction counted off.

Only one correct solution is required.

Attempts

1	2	3	4	5