The sum of the measures of the interior angles of a triangle (3-gon) is 180 degrees. The sum of the measures of the interior angles of a convex quadrilateral (4-gon) is 360 degrees. The sum of the measures of the interior angles of a convex pentagon (5-gon) is 540 degrees. What is the sum of the measures of the interior angles of a convex polygon with 23 sides (23-gon)?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

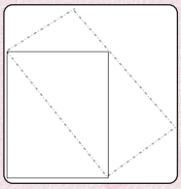
What is the 50th number in this sequence and how did you figure it out?

5, 11, 17, 23, 29, 35, 41, ...

Math Vision Enrichment Centre Pte Ltd
Age 12-13

A man was making a journey to the local village with a basket of fresh eggs. On his way, he came to a toll bridge. Unfortunately, the man had no money. The bridge operator said he could cross if he would give him half of his eggs and half an egg. The man obliged. Further down the road, he came to a second toll bridge. Of course, he still had no money but that bridge operator let him cross for half his eggs and half an egg. He continued on his way to reach yet another toll bridge. The bridge operator again charged him a toll of half of his eggs and half an egg. This left the poor man with no eggs. How many eggs did he have when he started on his journey?

Math Vision Enrichment Centre Pte Ltd
Age 12-13



The vertical rectangle (solid line) has an area of 40 square inches. Find the area of the inclined rectangle (dotted line).

Math Vision Enrichment Centre Pte Ltd
Age 12-13

A deck of 52 playing cards is cut into three separate piles. In the first pile there are three times as many Reds as Blacks.

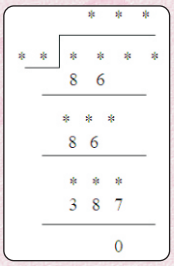
In the third pile there are twice as many Blacks as Reds. How many cards of each colour are there in each of the three piles ?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

The Morris family is planning a trip. They have nine days and decide to explore the country. They want to avoid the stress of a long can trip, so they agree to drive a relatively short distance on the first day, and add just 20 more miles on each subsequent day. On the last day of their vacation, they would have traveled 1080 miles. How many miles would they travel on the fourth day ?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Find the missing numbers.



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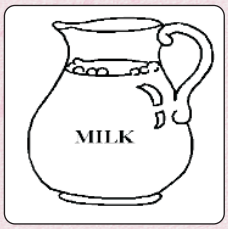
Age 12-13

If ABCD × 4 = DCBA.
Find the value of A,B,C and D.

A shopkeeper has four weights for weighing 1 kg to 40 kg. What are these four weights so that he can weigh any weight from 1 kg to 40 kg?

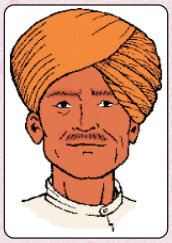
Math Vision Enrichment Centre Pte Ltd
Age 12-13

From a can full of milk, 10 liters of milk is taken out and is replaced with water. This operation is repeated twice again. If the capacity of the can is 50 liters, What is the ratio of water and milk in the can after two operations?



Math Vision Enrichment Centre Pte Ltd
Age 12-13

A man engaged a servant and promised to pay him after one year of service, a turban (traditional hat) and 900 pounds. The servant served him for nine months and got 650 pounds and a turban. Find the price of turban.



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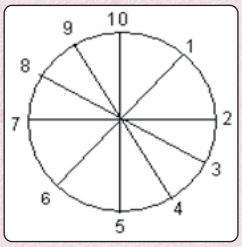
Age 12-13

Here is a Sketch: - Can you rearrange the position of the number 1 to 10 such that the sum of any two adjacent numbers is equal to the sum of the pairs of numbers at the opposite ends of the diameters.



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Age 12-13

If 5 tyres were used on a car which has travelled 20,000 miles. How many miles did each tyre sustain, If all the tyres were used equally in sustaining this mileage?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

There are 8 balls of identical shape and size, of which only once is slightly heavy. Can you find the heavier ball by using the balance only twice?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

A car travels at a speed of 20 mph while going up-hill, and then returns over the same distance at a speed of 30 mhp. What is the average speed for the total trip?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Joan and Jane are sisters. Jean is Joan's daughter and 12 years younger than her aunt. Joan is twice as old as Jean. Four years ago, Joan was the same age as Jane is now, and Jane was twice as old as her niece. How old is Jean?

Two friends decide to get together; so they start riding bikes towards each other. They plan to meet halfway. Each is riding at 6 MPH. They live 36 miles apart. One of them has a pet carrier pigeon and it starts flying the instant the friends start traveling. The pigeon flies back and forth at 18 MPH between the 2 friends until the friends meet. How far does the pigeon travel?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

There are 7 tennis balls which are identical in all aspects except that one of them weighs slightly less than the other 6. How can you identify the one that weighs less on a balance scale with no more than 2 separate weightings?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

If $\frac{1}{2}$ of 16 were 13, what would $\frac{1}{3}$ of 32 be?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

You have a huge box of beautiful decorated tiles, enough to provide a border in two rooms. You really can't figure out how to arrange them, however. If you set a border of two tiles all around, there's one left over; if you set three tiles all around, or four, or five, or six, there's still one tile left over. Finally; you try a block of seven tiles for each corner, and you come out even. What is the smallest number of tiles you could have to get this result?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

A recent survey was conducted of middle school students. Two hundred students were asked if they liked hamburgers and/or hot dogs. The results showed that 5 percent of the students liked neither, 85 percent liked hamburgers, and 23 percent liked hotdogs. What was the percentage of students that liked both?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

An apple orchard owner decides to sell apples on the side of the road in front of his orchard. The apples are sold by the pound. The price per pound (in cents) of various types of apples are listed below:

Granny Smith - 66 cents
McIntosh - 48 cents
Red Delicious - 72 cents
Roxbury Russet - 78 cents
Golden Delicious - 90 cents

Based on the above prices, in cents how much would Rome apples cost per pound at this apple stand?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Arrange the ten digits 0 to 9 in three arithmetical sums, using three of the four operations of addition, subtraction, multiplication, and division, and using no signs except the ordinary ones implying those operations. Here is an example to make it quite clear (note that the example is not correct):
3 + 4 = 7 9 - 8 = 1 5 X 6 = 30

Math Vision Enrichment Centre Pte Ltd
Age 12-13

A palindromic number is a number that reads the same backwards as forwards such as 1881.

How many palindromic years will occur in the next 2000 years?

Nick and John were exercising when the subject of weight came up. Nick had no problem telling John his weight, but John said he had more "mass" than he wanted. He wouldn't come right out and reveal his weight; so he told Nick this riddle. " I weigh 147 pounds plus half of my weight," he said. How much does he weigh?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Divide 110 into two parts so that one will be 150 percent of the other. What are the 2 numbers?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Can you replace the question marks with three math symbols to make the following equation correct;

(2 ? 3) ? (6 ? 2) ? (3 ? 1) = 5

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Students at Monty High with a class size under of 30 took a math test. One third of the class got a "B", one quarter a "B-", one sixth a "C", and one eighth failed. The remainder of the students got an "A" How many students got an "A"?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

When manufacturing bars of soap, the cutting machine produces scraps. The scraps from 11 bars of soap can be made into one extra bar. What is the total number of bars that can be made after cutting 250 bars of soap?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Kerry loves dumplings. He can eat 32 of them in an hour. His brother Pete needs 3 hours to eat the same amount. How long will it take them both together to eat 32 dumplings?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Joan and Jane are sisters. Jean is Joan's daughter and 12 years younger than her aunt. Joan is twice as old as Jean. Four years ago, Joan was the same age as Jane is now, and Jane was twice as old as her niece. How old is Jean?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Find a simple method of solving:

6751X + 3249Y = 26751

3249X + 6751Y = 23249

The following multiplication example uses every digit from 0 to 9 once (not counting the intermediate steps).

Fill in the missing numbers.

```
7 x x
4 x
-----------
x x x x x
```


Math Vision Enrichment Centre Pte Ltd
Age 12-13

At a sports banquet there are one hundred athletes. Each one is either a football or basketball player. At least one is a football player. Given any two of the athletes, at least one is a basketball player. How many of the athletes are football players?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Kevin flew to Puzzle land at the fantastic speed of 1000 miles per hour. There he picked up his friend and flew back, burdened by the extra weight, at only 500 miles per hour. What was his average speed?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Can you arrange the odd digits 1, 3, 5, 7, and 9, and the even digits, 2, 4, 6, and 8, in such a way that the odd ones add up to the same as the even ones? You can use arithmetical signs and decimals, but the idea is to try and arrive at the simplest possible solution. There are, of course, many possible answers.

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Barry went to a sporting goods store with $100 to buy some golf equipment.

If he spent $40 on a new driver, 20% of what was left on a new putter, 1/8 of his original money on golf balls, and 31/71 of what was left of his money on a golf cart, how much money does he have left?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Using standard mathematical symbols, e.g. +, -, x, etc., rearrange (4) fives to equal the numbers one to ten. For example, 5/5 + 5 - 5 = 1, 5/5 + 5/5 = 2, etc.

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Use each of the digits 1, 2, 3, 4, 5 and 6 once only, in this multiplication problem to make it correct.

```
  ? ?
x ?
-----
? ? ?
```


Math Vision Enrichment Centre Pte Ltd
Age 12-13

Bob is ten years older than his brother Stan. There was a time when Bob was three times as old as Stan. What was Stan's age when Bob was three times as old?

Math Vision Enrichment Centre Pte Ltd

Age 12-13

Many years ago when gasoline was only 46 cents a gallon, I stopped to fill up my car. I gave the attendant a $20.00 bill and waited for my change. Unexpectedly, he charged me for the number of gallons that the car needed instead of the dollar amount. (for example if the car took 8.4 gallons he would have charged me $8.40. Because he did this, I received less in change than I should have. The funny thing is that I had received in change exactly the amount that I should have been charged for the gas in the first place. Remembering that the cash indicator on a gas pump will only charge to the nearest half-cent, how many gallons of gas did I buy that day?

Math Vision Enrichment Centre Pte Ltd

Age 12-13

What is the four-digit number (no zeros) in which the third digit is the number of "winds," the first digit is one-half of the third, the second digit is double the third and the last digit is one-half the sum of the first three?

Math Vision Enrichment Centre Pte Ltd

Age 12-13

What would be the next number in the following sequence?

11 1, 331, 161,051 19,487, 171 ?

Math Vision Enrichment Centre Pte Ltd

Age 12-13

The square of 13 is 169. Take the last digit of the square, 9, and place it in the middle, making 196. This is the square of 14, the next number above 13. What are the next numbers which also have this property?

Math Vision Enrichment Centre Pte Ltd

Age 12-13

The following multiplication example uses every digit from 0 to 9 at least once. Letters have been substituted for the digits. Can you replace the letters and make the original multiplication problem?

```
  B O G
x B O G
----------------
 L Y L E
 G G U L
 T U O O
----------------
 U N I T O E
```


Math Vision Enrichment Centre Pte Ltd

Age 12-13

There are several ways to come up with 100 by using the digits 0 through 9. One way is: 0 + 1 + 2 + 3 + 4 + 5 + 6 + 7 + (8 x 9) = 100. Another way is 78 3/6 + 21 45/90. Can you come up with 2 more ways?

Math Vision Enrichment Centre Pte Ltd

Age 12-13

The day September 18th has an interesting trait. Notice that September is the 9th month.

Therefore the 18th day is a multiple of the 9th month.

How many days in a year are multiples of their month number?

Math Vision Enrichment Centre Pte Ltd

Age 12-13

Find the greatest possible number that satisfies all of the following conditions:

1. Positive whole number less than 100

2. Four more than the number is a multiple of 6

3. The sum of the number's digits is a multiple of 4

The width of the Abacus river is 1150 meters. The Square Root bridge spans the Abacus river.

If one-fifth of the bridge stands on one side of the river while one-seventh of the bridge is on the other side, in meters how long is the Square Root bridge?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Mr. Newton assigned mathematics homework to his class for a new chapter. He told the students that on each day after the first day, they must do twice the number of problems that they had completed thus far in the chapter. If at the end of five days the students had completed one-third of the problems in the chapter, how long with it take them to do all of the assigned problems for the chapter?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

If you inserted three numbers between one-fourth and one-half to form an arithmetic sequence of five numbers, what would the sum of the five numbers of in the sequence be?

Please enter your sum using decimals.

Math Vision Enrichment Centre Pte Ltd
Age 12-13

A number is called a pretty number if it has exactly 3 different whole number factors. For example, the factors of 4 are 1, 2, and 4 since 1 x 4 =4 and 2 x 2 = 4. The factor 2 is not counted twice.

What is the sum of all the pretty numbers between 0 and 50?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Mr. Newton's mathematics class took the same math test and Mr. Euclid's students. Mr. Newton's has 20 students and the average (mean) test score was 90 percent. The average of Mr. Euclid's class was 80 percent. If you combine both classes, the average score on the test was 84 percent.

How many students did Mr. Euclid have in his class?

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Math Vision Enrichment Centre Pte Ltd
Age 12-13

Math Vision Enrichment Centre Pte Ltd
Age 12-13