ALU SCHOOL OF MATHEMATICS

ALU MATHS NEWS

Volume 1, Issue 2 **News Letter** *Since 02/06/2016*

We are delighted to bring to you this issue of ALU Mathematics News, a monthly newsletter dedicated to the emerging field of Mathematics. This is the first visible ―output from the Department of Mathematics, Alagappa University. We are committed to make ALU Mathematics News a continuing and effective vehicle to promote communication, education and networking, as well as stimulate sharing of research, innovations and technological developments in the field. However, we would appreciate your feedback regarding how we could improve this publication and enhance its value to the community. We are keen that this publication eventually grows beyond being a mere ―news letter to become an invaluable information resource for the entire Mathematics community, and look forward to your inputs to assist us in this endeavor.

Dr. N. Anbazhagan

MATHS JOKES

1) Student 1: What is the integral of "1/cabin"?
   Student2: "log cabin"
   Student1: No, answer is houseboat-you forgot the constant C

Explanation : We are treating cabin is a variable.
The integral of 1/x is log x.
However, since it's integration, you,ve got to add a constant.
So ∫(1/cabin) = log cabin + C , or a log cabin plus the sea = houseboat.
Student2: ??????????????

2) Student: even

Teacher: How?

Student: Take the s out.

Teacher: ?????????????

3) Teacher: Why are you doing your multiplication on the floor?

Student: You told me not to use tables.

Teacher: !!!!!!!!!!!!!!!!

4) Father: What did you do in school today?

Son : We played a guessing game.

Father: I thought you had your math exam.

Son : Exactly!!!

Father: ???????????

5) Mother: Why are you drumming on your algebra book with two big sticks?

Son : Because we are studying log rhythms.

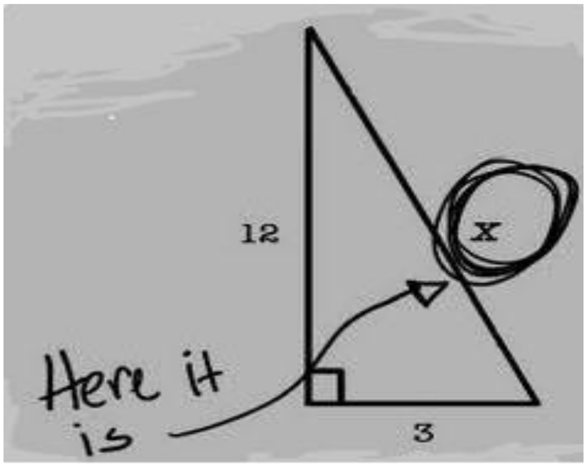
Mother: !!!!!!!!!!!

6) Surgeon: Nurse! I have so many patients! Who do i work on first?

Nurse : Simple. Use the order of operations.

7) Teacher: Find x?

Student:



SHOPPING GOODIES

Shopping often involves discount and sale price. But having a good number sense will make you a better consumer. In this article we will examine and compare common sales offers used in retail stores.

Buy 1, Get 1 Free. In this world, nothing is free. The best way to compute the cost per item is to take the price for one item, and divide by two. Then you can determine if this is a good price. For example, if the price for one is $19.99, then the cost per item is roughly $20 divided by 2, or $10 each.

Buy 2, Get the Third free. The best way to compute the cost per item is to take the price for two items, and divide by three. Then you can decide if this is a good price. For example, if the price for one is $7.49, then the cost per item is roughly $15 divided by 3, or $5 each.

Buy 1, Get One 1/2 Price. If the price for one is $19.99, then the cost per item is approximately the sum of $20 and $10, divided by 2, which is $15.

Buy 1, Get the Second for $1. If the price for one is $19.99, then the cost per item is about $21 divided by 2, or $10.50.

For each of the offers above, we computed the actual cost per item. Once you know the actual cost, you can determine if an offer is a good, and the true value it presents.

Another common technique for boosting retail sales is through coupon offers. If there is more than one coupon, things can get confusing. For our first example, suppose the same store offers you these coupons:

1. **20% off any purchase**
2. **$10 off your purchase of $30 or more**

Which coupon would you choose and why? The answer depends on how much you buy from the store. The first coupon is a discount rate of 20% -- the discount will vary in direct proportion to the amount of your purchase. The second coupon is a fixed amount off a minimum buy. Let's compare these coupons for several purchase amounts to see which one saves you more.

Ex. 1	**How Much Will You Save?**	
purchase	**20% off**	**$10 off $30 or more**
$20	$4	$0
$25	$5	$0
$30	$6	$10
$35	$7	$10
$40	$8	$10
$45	$9	$10
$50	$10	$10
$55	$11	$10
$60	$12	$10

In example 1, the break-even point is a purchase of $50. For our second example, suppose the same store offers you these coupons:

1. **20% off any purchase**
2. **$25 off your purchase of $100 or more**

Once again, which coupon you choose depends on how much you buy. Let's compare these coupons for several purchase amounts to see which one saves you more.

Ex. 2	**How Much Money Will You Save?**	
purchase	**20% off**	**$25 off $100 or more**
$25	$5	$0
$50	$10	$0

$75	$15	$0
$100	$20	$25
$125	$25	$25
$150	$30	$25
$175	$35	$25
$200	$40	$25

In example 2, the break-even point is a purchase of $125.

In the problems above, we computed the amount saved for each coupon (i.e., the discount). To compute the sale price (the amount you actually pay), you would have to subtract the discount from your purchase amount. If you only have a certain amount of money to spend, then sometimes it is easier to compute the sale price directly. To do this, take the discount rate and subtract it from 100%, then multiply the result by your purchase amount. In the case of 20% off, you would multiply your purchase amount by 80% to get the amount you will actually pay. This is shown in example 3 below.

Ex. 3	**How Much Money Will You Pay?**	
purchase	**20% off**	**$10 off $30 or more**
$20	$16	$20
$25	$20	$25
$30	$24	$20
$35	$28	$25
$40	$32	$30
$45	$36	$35
$50	$40	$40
$55	$44	$45
$60	$48	$50

In example 3, the break-even point is a purchase of $50.

The information above might be common sense for some readers, and an eye-opener for others. From my experience, people vary widely when it comes to number sense and shopping habits. In any event, it is good to be able to catch a cashier's errors when making a purchase.

MATH LOGIC

(1) What is the sum of two consecutive even numbers, the difference of whose squares is 84?

Ans : 42

Explanation:
Let the numbers be x and $x + 2$.
Then, $(x + 2)^2 - x^2 = 84$
$4x + 4 = 84$
$4x = 80$
$x = 20$
The required sum = $x + (x + 2) = 20 + 22 = 42$.

(2) 1, 4, 7, 10, _____, ...
What is the next number in the above sequence?
What is the 1000th number or n-th number?

Ans - 13
Explanation:
Let a_n be the nth term of the sequence .

$a_n = a_{n-1} + 3$
$= a_{n-2} + 6 = a_{n-2} + 2*3$
……..
$= a_1 + (n-1) *3$
$= 1 + (n-1) *3$

MATH TRICKS

Teacher: Tell me any four digit number?
Student: 8969
Now teacher write the final answer 28967 on corner of the blackboard.
Teacher: Again tell any four digit number.
Student: 3029
Teacher: Now I write one four digit number 6970. Again you tell any four digit number.
Student: 3268.
Teacher: Now I write 6731 and now add these five numbers.

students are surprised. Because their answer is same before teacher wrote the answer.

DID YOU KNOW?

1) Multiplying ones always gives you palindromic numbers.

Explanation If you multiply 111,111,111×111,111,111 you get 12,345,678,987,654,321- a palindrome number that reads the same forwards or backwards. And that works all the way backdown to 11×11=121 or just 1×1=1.

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3) The Universe isn't big enough for Googolplex

Explanation A googolplex is 10 to the power of a googol, or 10 to the power of 10 to the power of 100. Our known universe doesn't have enough space to actually write that out on paper. If you try to do that on a computer, you will never get the answer. Because, it won't have enough memory.

MATH LOGIC

one day, there was three scientists kidnapped by one terrorist group. All scientists were tied column wise facing in the same direction. One of the terrorist came with a plate with 3 red roses and 2 white roses. The scientists noticed that one flower were placed on each head without knowing the colour of the flower. The head of the terrorist came and said that," those who are able to say the colour of the flower on their head will be released". Third person had the possibilities to see the first two person's head and the second person also had the possibilities to see the first person's head. But the answer was told by first person without any possibility to find out the colour of the flower on others head. How is it possible?

Answer - Red

Explanation

First person had a thought that why last one couldn't told the answer. If the first person and second person had white rose on their head, the only probability for last one is red. So first and second didn't have white and white combination. So the remaining probability are red and white, white and red, red and red. And again first had a thought that why the second person couldn't told the answer.

If the first person had white only probability for second person is red. But if first person had red, the probability for second had white or red. So the doubt arose only when first person had red flower. So the first came to know the answer clearly. He get released.

EASY MATHS RIDDLES WITH ANSWERS

1. *WHY SHOULD YOU NEVER MENTION THE NUMBER 288 INFRIEND OF ANY ONE?*

   BECAUSE 288 IS TOO GROSS
2. *HOW MANY EGGS CAN YOU PUT IN AN EMPTY BASKET?*

   ONLY ONE EGG BECAUSE AFTER THAT THE BASKET DOESN'T EMPTY
3. *HOW MANY 9s ARE THERE BETWEEN 1 AND 100?*

   TWENTY 9s
4. *I AM AN ODD NUMBER ,TAKE AWAY AN ALPHABET AND I BECOME EVEN . WHAT NUMBER AM I?*

   7 (SEVEN ;S = EVEN)

MATHS TRICKS

1) A Monkey ate 100 bananas from December 1 through 5 . Each day he ate six more bananas than on the previous day.
How many bananas did monkey eat on December 5?

Ans : 32

Explanation:

Dec 5 x
Dec 4 (x – 6)
Dec 3 (x – 12)
Dec 2 (x – 18)
Dec 1 (x – 24)
Total 5x – 60 = 100
x = 160/5 =32.

2) The sum of the digits of a two-digit number is 15 and the difference between the digits is 3.
What is the two-digit number?

Ans : 96 or 69

Explanation

Let the ten's digit be x and unit's digit be y.
Then, $x + y = 15$ and $x - y = 3$ or $y - x = 3$.
Solving $x + y = 15$ and $x - y = 3$, we get: $x = 9$, $y = 6$.
Solving $x + y = 15$ and $y - x = 3$, we get: $x = 6$, $y = 9$.
So, the number is either 96 or 69.

Useful Maths Puzzles For Kids

Puzzles are an interesting yet challenging fun activity for kids. Some maths puzzles involve using shapes to complete a structure, finding your way around a maze, word searches and more. Some typical math puzzles offered on Math4childrenplus are: ***Magic squares, across down puzzles,***

match-up puzzles, circle drill, table drill and number sequences.

Across down math puzzles: These puzzles contain math problems in a square e.g. addition and subtraction problems. Each problem appears across a row or down a column. The problem contains one missing number if looking across or down. Children should use their skills in addition or subtraction to find the missing numbers and complete the puzzle. Each puzzle has an answer sheet attached.

Magic Squares math puzzles: This puzzle contains a grid with numbers filled up in some spaces. Other spaces are left out blank. Students need to find a number called the 'magic number' and find out other number combinations which make up that number. Kids keep filling up other spaces as they figure out the missing numbers.

Match-up puzzles: This puzzle could be applied for any kind of math topic. In the current case, addition, subtraction and division problems have been used. Children are expected to solve a problem and match it to the correct answer. A pen and ruler is needed to draw a line that makes the match. This is a suitable worksheet for extra homework and could be used also as a printable classroom test.

Circle drill puzzles: A circle drill contains a large circle within which are two smaller circles. The central circle contains a number beside which is an operation e.g. addition, subtraction, division or multiplication. The outer circle contains other numbers. Children are expected to use the central number and the operation near it to solve the puzzle.

Secret trails: This contains a group of numbers within a grid and a final number at the end of the grid. Kids have to look at the maze of numbers and determine using their addition or subtraction skills, which line of numbers lead to the circled number at the bottom of the table. Table drill: This contains a table divided up into grids. The top grid contains a series of numbers while the column grid contains another series. The top left hand grid contains an operation e.g. addition, subtraction, division, multiplication etc. The answers are filled up in the grids that do not contain numbers. There is an answer key attached for reference.

Number sequence: This contains a series of numbers which progress in a particular way. Kids need to find the operation or number that defines the sequence so as to find the next numbers. After finding these numbers, they should be written down in the spaces that follow. These puzzles are an exciting way to teaching kids math in 1st, 2nd, 3rd, 4th, 5th, 6th and 7th grades. They are also useful resources for testing and reinforcing math skills children learn over different levels. Teachers can use these to supplement their course while parents could use them to increase kid's attention in a fun way.

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