

17/9/2014

PUZZLES

MATHEMATICS

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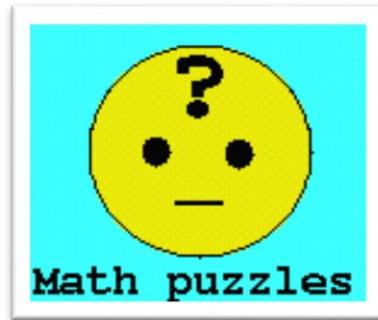
INTRODUCTION

One way to think about a puzzle is as a game that a person plays against themselves. Game theory is a well-developed branch of mathematics that focuses on describing how multiple actors in given situations interact with each other, either socially or competitively. One of the great successes of game theory is a description of how good higher-level strategies can emerge from a low-level description of the rules or setup of the game. Puzzle is any problem that challenges the mind, stimulates thinking for potential solutions and provides a rewarding experience upon solving it.

If a puzzle is just a one-player game, and a one-player game is just a graph where you have to find a sequence of moves from the initial state to the end state, then what could possibly be so interesting about a puzzle? After all, the correct sequence of moves is just a path from one vertex, labeled as the initial state of the puzzle to the ending state, which is the solved puzzle.

OBJECTIVES

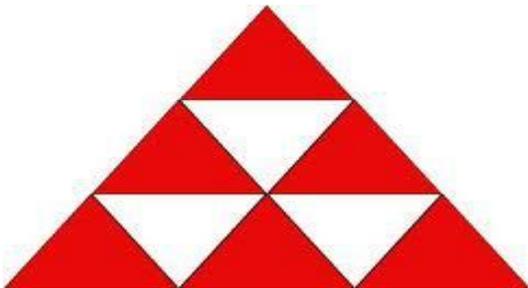
- To give knowledge about how to solve this problems.
- To know about the puzzle is any problem that challenges the mind , stimulates thinking for potential solution and provides a rewarding experience upon solving it.



MATH PUZZLES

These puzzles do not require any mathematical knowledge, just logical reasoning. Check, how smart you are. If you cannot solve them, take it easy

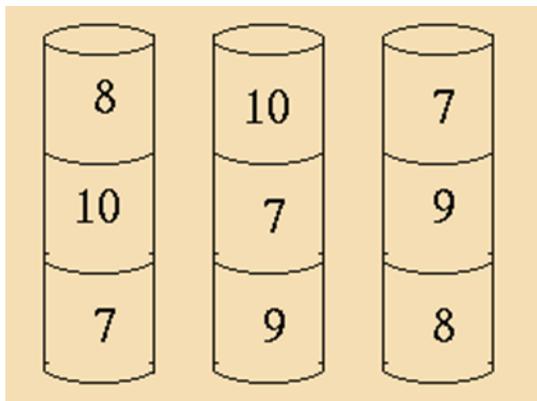
- 1. A cyclist buys a cycle for 15 pounds paying with a 25 pound cheque. The seller changes the cheque next door and gives the cyclist 10 pounds change. The cheque bounces so the seller paid his neighbour back. The cycle cost the seller 11 pounds. How much did the seller lose?**
- 2. Count the triangle in the picture below.**



3. A greengrocer was selling apples at a penny each, bananas at 2 for a penny and pears at 3 for a penny. A father spent 7p and got the same amount (greater than 0) of each type of fruit for each of his 3 children. What did each child get?

4. Mr. and Mrs. A are 120 km apart. A bee is on Mr A's nose. The couple cycle towards each other, Mr A at 25km/h and Mrs. A and 15km/h. The bee dashes from Mr A's nose to Mrs A's nose and back again and so on at 60km/h. How far does the bee travel before the cyclists crash?.

- 5.

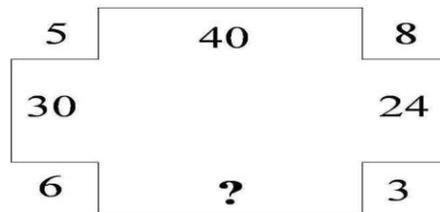


At a fairground stall there are 3 piles of cans. You get 3 throws. You can only knock off the top can of a pile. The 2nd throw counts double, the 3rd triple. How do you get exactly 50?

6. A woman bought something costing 34c. She only had 3 coins: \$1, 2c and 3c. The shopkeeper had only 2 coins: 25c and 50c. Fortunately another customer had 2 10c coins, a 5c coin, 2 2c coin and a 1c coin. How did they sort things out?

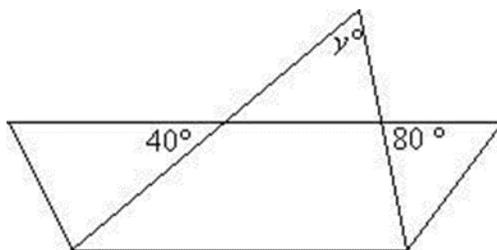
7. 13 Tom has 7 sandwiches, Jan has 5, Simon has none. They share them out equally. Simon leaves, paying for his sandwiches by leaving 12 biscuits. What's the fairest way for Tom and Jan to share out the biscuits?

8. Find the given number?



9. Pick a number. Multiply the digits together. Continue until you get a single digit. What is the only 2 digit number which would require more than 3 multiplication?

10. In the picture below, can you identify the value of angle 'Y'?



ANSWERS:

1. **Ans:** *21 pounds.*
2. **Ans:** *13*
3. **Ans:** *1 apple, 2 bananas and 1 pear.*
4. **Ans:** *The cyclists crash after 3 hours so the bee flies 180km .*
5. **Ans:** *7, 8, 9*
6. **Ans:** *They pool the money. The woman takes 71 ($50 + 10 + 10 + 1$), the shopkeeper takes 109 ($100 + 5 + 2 + 2$) and the customer 30 ($25 + 3 + 2$).*
7. **Ans:** *3 to Jan*
8. **Ans:** *18*
9. **Ans:** *77*
10. **Ans:** *60^0*

