

CHAT Pre-Algebra Christmas Extra Credit Puzzles

Instructions: There are 10 puzzles included here. Each is worth 2 extra credit points. You do not have to complete all of the puzzles. You will get credit for the ones you complete correctly.

PUZZLE NUMBER 1 : A Coin Problem

A teacher said, "In my hand are coins, none worth more than a quarter. All but 6 are pennies. All but 6 are nickels. All but 6 are dimes, and all but 6 are quarters. How much money do I have?"

PUZZLE Number 2: Order of Operations

Use parentheses and add operation signs in the box to make this statement true:

$$1 \square 2 \square 3 \square 4 = 6$$

PUZZLE NUMBER 3: The Antique Button Collection

Mike’s mother has an antique button collection. She has seven triangular buttons. She has six solid yellow buttons and three solid blue buttons. She also has six buttons that are square. Her most expensive button is blue/yellow, and it is not triangular or square. Of the triangular buttons, two are solid yellow and one is solid blue. Of the square buttons, two are solid blue and three are solid yellow. One solid yellow button is not triangular or square. Can you determine how many buttons are in her collection?

PUZZLE NUMBER 4: The Magic Square

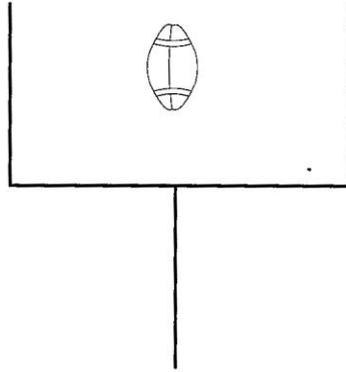
Place each of the digits from 1 to 16 so that each row, column, and diagonal add up to 34. Each of the numbers must be used only once.

The sum is 34.

			1
	11		14
3	10		
	5	9	4

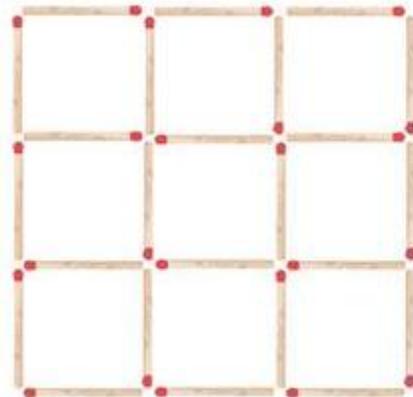
PUZZLE NUMBER 5: Field Goal Problem

The football goal post shows a ball going through the uprights. Move exactly two parts of the goal post so the ball is no longer between the uprights but there is still a goal post.



PUZZLE NUMBER 6: The Matchstick Puzzle

Leave just 6 squares by removing 8 matchsticks. Draw an X on each matchstick to be removed.



PUZZLE NUMBER 7 : Sudoku

Fill in the squares so that each row, each column, and each 3x3 block contains all of the digits 1 thru 9.

3		8	1	6				
	6		4		9	2		1
4					3	8		
				9	4		1	2
2			8		7			3
9	7		3	5				
		2	7					5
6		5	9		8		2	
				2	1	3		8

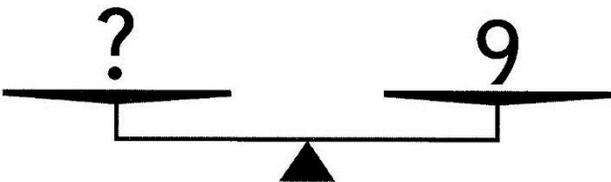
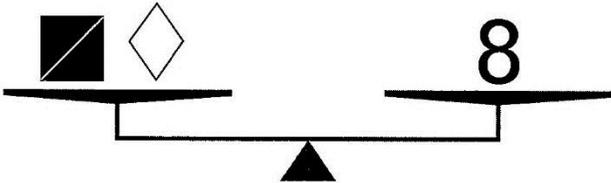
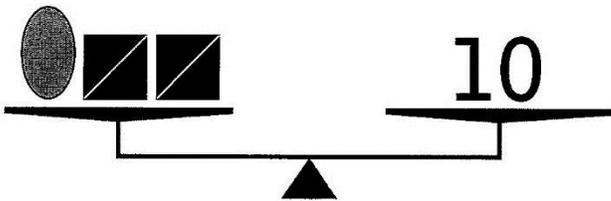
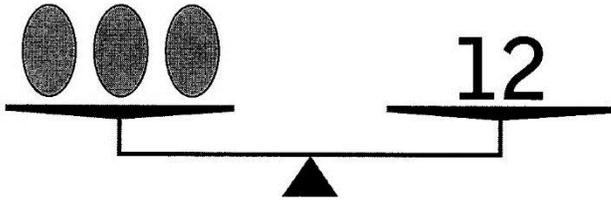
PUZZLE NUMBER 8: Produce Products

The numbers 1 through 9 are represented by 9 different vegetables in the equations below. Each veggie represents the same number throughout. If the broccoli equals 3, what is the identity of the carrot?

$$\begin{array}{l}
 \text{Cucumber} - \text{Broccoli} = \text{Peas} \qquad \text{Mushroom} + \text{Pumpkin} = \text{Cucumber} \\
 \text{Pumpkin} \times \text{Cauliflower} = \text{Tomato} \qquad \text{Peas} \div \text{Broccoli} = \text{Cauliflower} \\
 \text{Carrot} = ?
 \end{array}$$

PUZZLE NUMBER 9: Balance Math

Which answer can replace the question mark?



PUZZLE NUMBER 10: Buckets

Assume you have an unlimited supply of water. You have only two buckets (5-gallon and 3-gallon) from which you can fill, store, or dump water. Use the 5-gallon and 3-gallon buckets to get exactly 4 gallons of water (no estimating allowed).

PUZZLE NUMBER 11: Alphabet Soup

Where should the Z be placed and why?

A E F H I K L M N T V W X Y
B C D G J O P Q R S U

PUZZLE NUMBER 12: Patterns

What are the next two values after 19 in the sequence below?

1, 3, 6, 11, 19, ____, ____