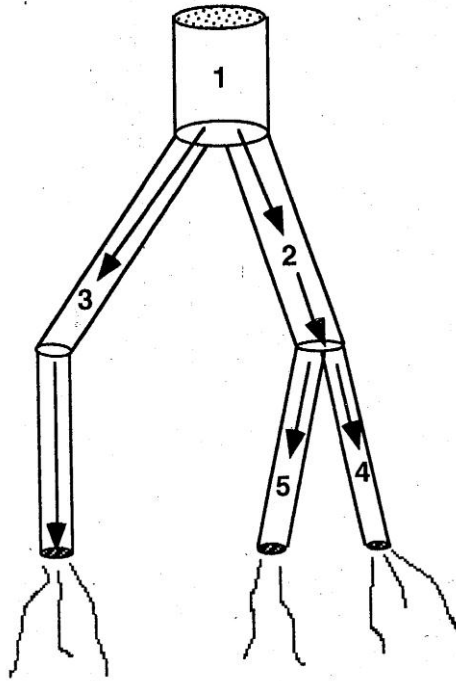


CHAT Algebra 1 Christmas Extra Credit Puzzles

Instructions: There are 8 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 Plumbing Problem

The diagram below shows part of a plumbing unit that provides water to your library. Two-thirds of the water entering through Pipe 1 goes through Pipe 2; the rest goes through Pipe 3. One-quarter of the water in Pipe 2 goes through Pipe 4. What fraction of the water entering through Pipe 1 actually exits through Pipe 4?

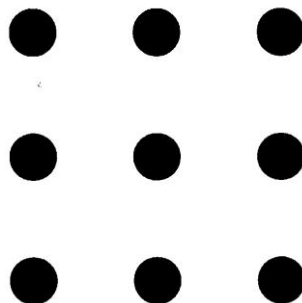


PUZZLE Number 2: The High School Musical

Many CHAT students are known for their musical talent. Of the students at CHAT, 62 students take band, 71 take choir, and 46 take dance. Of those who take band, 20 take choir but not dance. Seven students take band and dance but not choir. Six students take choir and dance but not band, and five students take all three. Twenty students do not take band, dance, or choir because they couldn't fit it into their schedules. How many students are at CHAT?

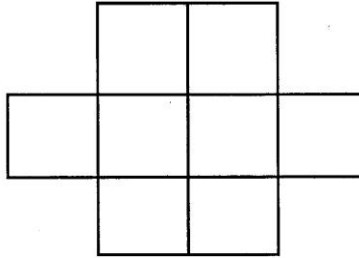
PUZZLE NUMBER 3: The Nine Dots

Connect all these dots without lifting your pencil and using only 4 straight lines. You may cross a line, but you may not trace over a line.



PUZZLE NUMBER 4: The Eight Digits

Place each of the digits 1, 2, 3, 4, 5, 6, 7, and 8 in the eight boxes below so that the boxes that touch horizontally, vertically, or diagonally do *not* contain adjacent numbers (such as 3 and 4, etc.). Each of the eight digits must be used only once.

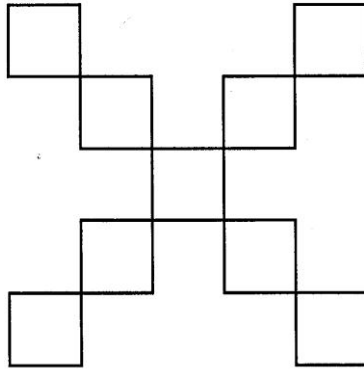


PUZZLE NUMBER 5: Bookworm

The first three volumes of a set of math problem-solving books are standing upright and in order on a bookshelf. Each book has one-eighth-inch covers and one inch of pages. A bookworm starts at the first page of Volume I and eats its way to the last page of Volume II. How far does the bookworm travel?

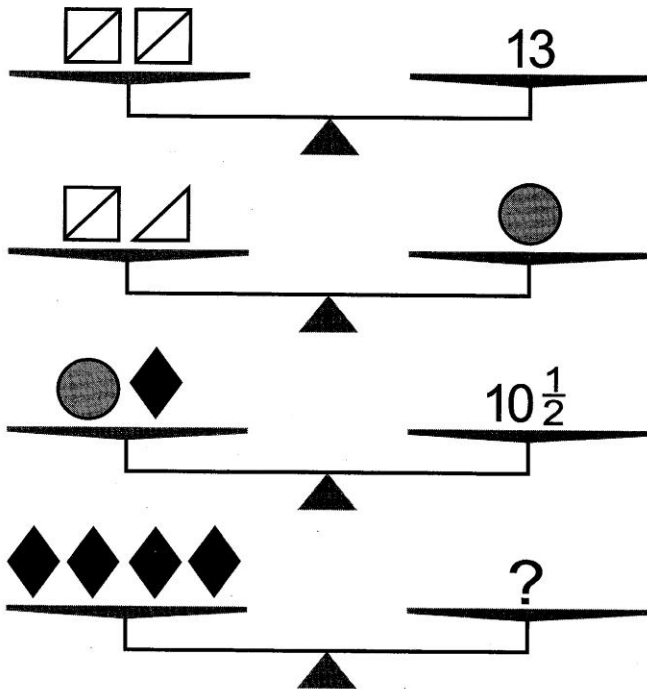
PUZZLE NUMBER 6: Sum of 26

Place the digits 1 through 9 in each square below (without repetition) so that each pair of diagonals adds to 26 and the four corners add to 26.



PUZZLE NUMBER 7 : Balance Math

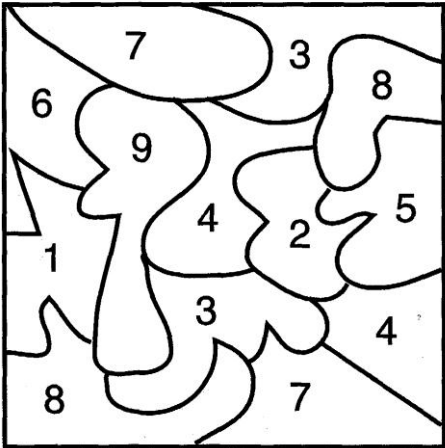
Use the balanced scales to find the missing number.



Problem 2	
?	=

PUZZLE NUMBER 8: Number Lines

Can you draw the straight line that passes through the highest number total for the box? Draw the line and write down the total.



Total = _____