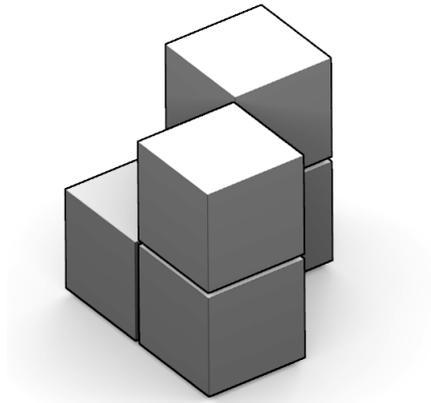
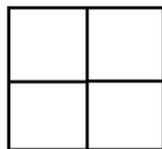


1. There are two boys, two dogs, and three chickens on a playground. How many legs total are there on the playground?

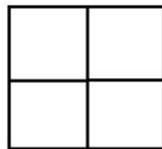
2. Travis built this solid:



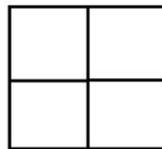
What are the top, front, and side projections of Travis' solid?



**FRONT**

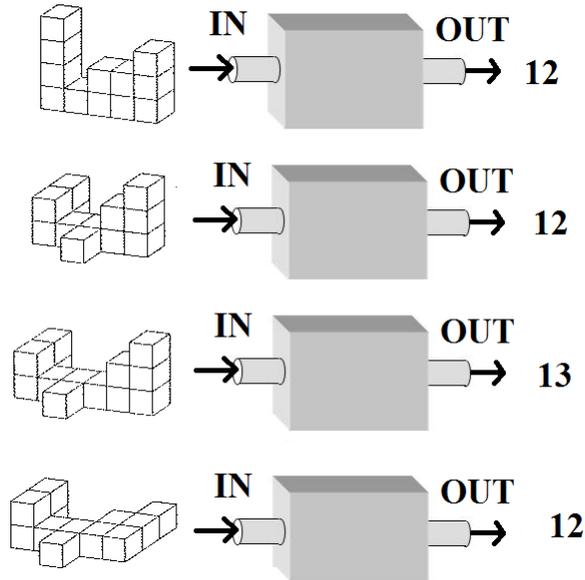


**TOP**

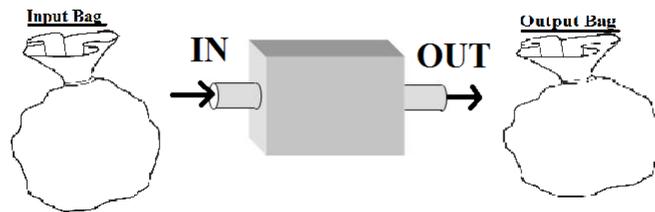


**LEFT SIDE**

3. What is the rule for the function machine below?



b. What types of things will you find in the input and output bags of this function machine? Fill in a few examples on each side.

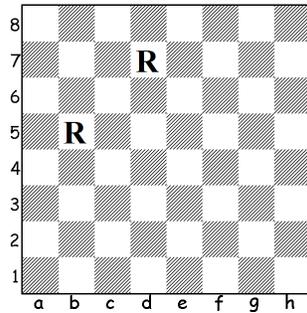


4. In the table shown in the picture, Travis wrote four numbers that have a sum of 50. What number is the butterfly covering?

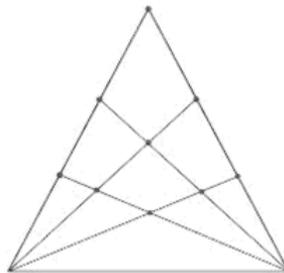
5	
20	17

5. Anita, Clara, Michael, and Daniel had an apple eating contest. The person who ate the most apples won. Daniel ate more apples than Clara, and Michael ate fewer apples than Anita. We also know that Daniel did not win. Who ate the most apples?

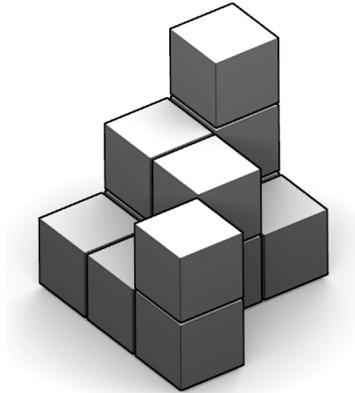
6. Challenge your teacher to the Two rook game. You can choose to either go first or second. The rooks will be starting on B5 and D7. Remember, you can move either rook to the right as many spaces as you want, and the goal is to be the **LAST** person to make it to the end of the board.



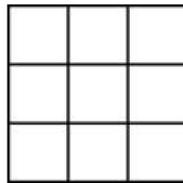
7. How many triangles are there in this picture?



8. a. How many blocks were used to build the solid below?

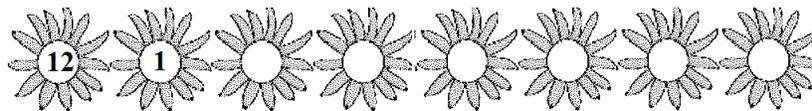


b. What is the top projection of this solid?

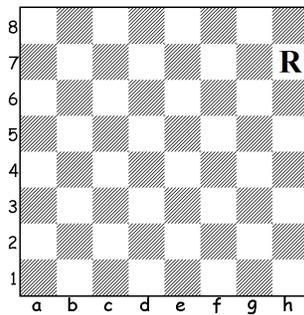


**TOP**

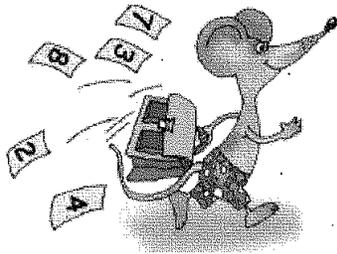
9. Katja writes down different numbers on flowers. She only uses the numbers 1 and 2. On how many flowers can she write if her numbers have length either 1 or 2?



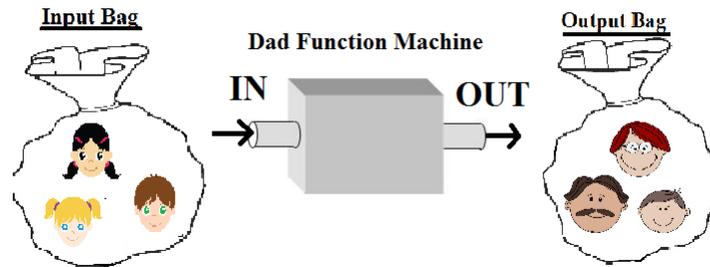
10. Challenge your teacher to the 1 Rook Game. You can choose to go first or second. The rook will start on H7. Remember, you can move the rook either down or to the left as many spaces as you want, and the goal is to be the **FIRST** one to get to the bottom left square (A1).



11. What is the difference between the largest and smallest of the numbers that fell out of Mr. Mouse's briefcase?



12. The following function machine sends any person in its input bag to their father.

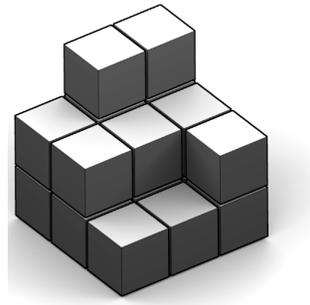


a. Recall, a function is one-to-one if every two different inputs go to two different outputs. Is the “Dad Function Machine” one-to-one? Why or why not?

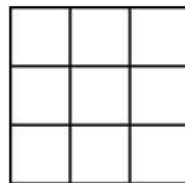
13. April said to Katherine “If you give me four apples, I will have exactly as many apples as you.” How many more apples does Katherine have than April?

14. Mr. and Mrs. Taylor have three daughters. The youngest is five years old. The middle daughter is 4 years younger than the oldest daughter, and 6 years older than the youngest daughter. How old is the Taylors' OLDEST daughter?

15. a. How many blocks were used to build the solid below?



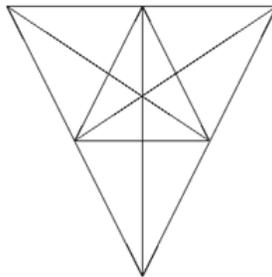
b. What is the top projection of this solid?



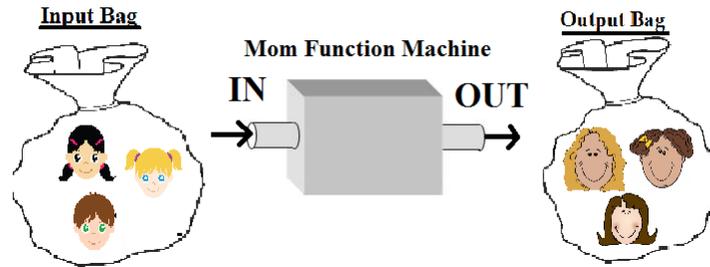
**TOP**

16. Katherine can run 5 miles per hour, and starts her daily jog at 8AM. Katja follows the same route, but Katja can run 10 miles per hour and starts at 11AM. What time will it be when Katja catches up to Katherine? How far will they have run?

17. How many triangles can you find in the picture below? How many are the ones you can find the same size?



18. Below is a function machine that sends any person in its Input bag to their mother.

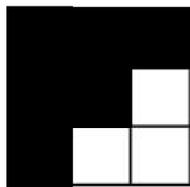


a. Using this function machine, can you reach your grandmother on your mothers side? Why or why not? (You can use the function machine more than once)

b. Using this function machine, can you reach your grandmother on your fathers side? Why or why not? (You can use the function machine more than once)

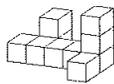
19. Frog is racing his friend Toad to the pond. Every time Frog jumps 2 inches forward, Toad jumps 3 inches forward. Frog starts 15 inches from the pond, and Toad starts 20 inches from the pond. Who gets there first?

20. Katja built a solid, and this was one of her projections. Is this the top, front, or side projection of her solid? Why is it that type of projection?

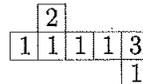


21. April has four books: red, blue, yellow, and green. She wants to arrange them on the bookshelf so that the green one is always sitting one book to the right of the yellow one. How many ways can she arrange her books on the shelf?

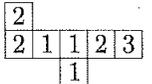
22. Paul and Jon were building using identical cube blocks. Paul made the building shown in Picture 1. Picture 2 shows Paul's building as seen from above. Picture 3 shows Jon's building as seen from above. (Note: the numbers in each square indicate how many blocks are placed one on top of another in that place.) Which of the answers shows Jon's building?



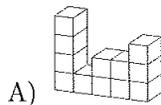
Picture 1.



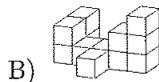
Picture 2.



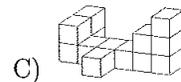
Picture 3.



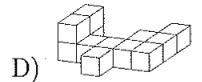
A)



B)

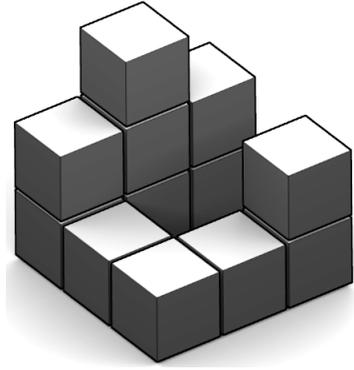


C)

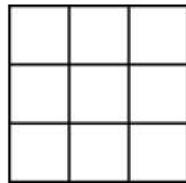


D)

23. a. How many blocks were used to build the solid below?



b. What is the top projection of this solid?



**TOP**

24. Katherine is rowing up the river in a row-boat at a constant speed. It takes her 3 hours to row 12 miles. Travis rows at the same speed. How long does it take Travis to row 40 miles?