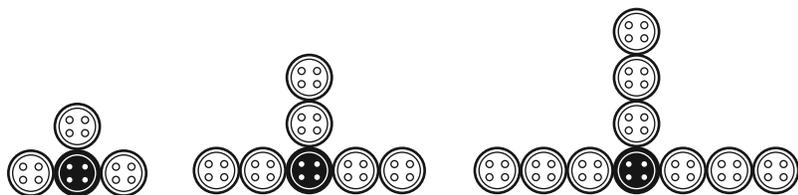

Buttons

This problem gives you the chance to:

- describe, extend, and make generalizations about a numeric pattern
-

Gita plays with her grandmother's collection of black and white buttons. She arranges them in patterns.

Her first 3 patterns are shown below.



Pattern 1

Pattern 2

Pattern 3

Pattern 4

1. Draw Pattern 4 next to Pattern 3.
2. How many **white** buttons does Gita need for Pattern 5 and Pattern 6?

Pattern 5 _____

Pattern 6 _____

Explain how you figured this out.

3. How many buttons in all does Gita need to make Pattern 11? _____

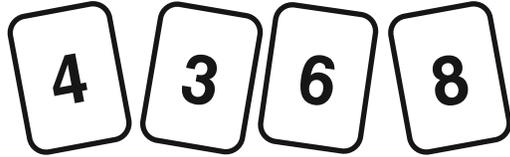
Explain how you figured this out.

Fractions

This problem gives you the chance to:

- work with fractions, with equivalence and comparison of size
-

Tom has four number cards.



1. He arranges his four cards to make fractions less than 1.
Using each number card only once, make two fractions that have the same value.

$$\frac{\square}{\square} \quad \text{and} \quad \frac{\square}{\square}$$

2. Find a way to use two number cards to make a fraction less than $\frac{1}{2}$.

$$\frac{\square}{\square}$$

3. Find two ways to use two number cards to make fractions between $\frac{1}{2}$ and 1.

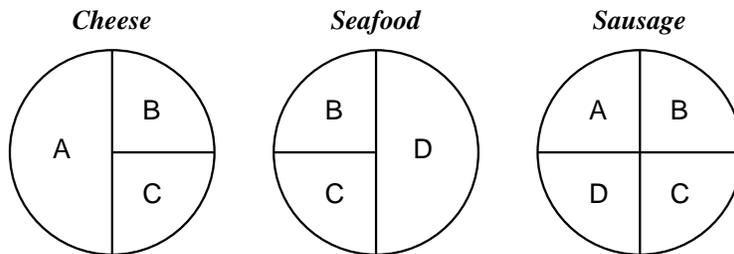
$$\frac{\square}{\square} \quad \text{and} \quad \frac{\square}{\square}$$

Sharing Pizza

This problem gives you the chance to:

- work with fractions in a practical context

Aretha, Beth, Carlos, and Dino go into a pizza shop and order three different pizzas. They divide the pizzas so that they each end up with the same amount to eat. Aretha can't eat seafood. The other friends like all the pizzas.



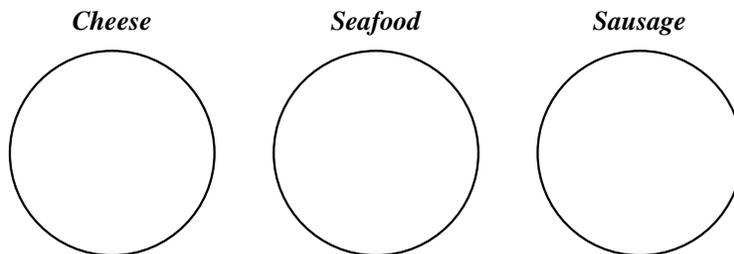
Aretha gets all the pieces labeled A. Beth gets those labeled B. Carlos gets those labeled C. Dino gets those labeled D.

1. What fraction of the *Cheese* pizza does Aretha eat? _____

What fraction of the *Sausage* pizza does Aretha eat? _____

How much pizza does Aretha eat? _____

2. Complete the diagram below to show how **five** friends—Aretha, Beth, Carlos, Dino, and Erica—would divide the **three** pizzas. Remember that each person gets the same amount to eat. Remember that Aretha can't eat seafood, but the other friends like all three pizzas.



How much pizza does Aretha eat this time? Explain. _____

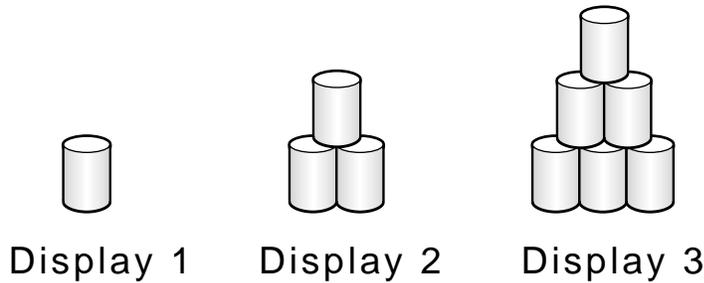
Soup Cans

This problem gives you the chance to:

- extend and check a given pattern
-

Julie is building a display of soup cans.

The diagram shows the beginning of her display:



1. How many cans are there in display 3? _____
2. Draw display 4 next to display 3 in the diagram above.
3. Julie begins to make a table to show the number of cans needed to make these displays.

Display number	1	2	3	4	5
Number of cans	1	3			

Fill in the missing numbers in Julie's table.

Explain how you found the number of cans in display 5.

4. Julie says, "I need 22 cans to make display 7."
She is **not** correct.

How many cans are needed to make display 7? _____

Explain your answer.

5. Each can is 6 inches high.
Julie wants to finish her display with a stack that is 5 feet high.
How many rows will there be?

6. How many cans will Julie need?

Show how you figured out your answer.