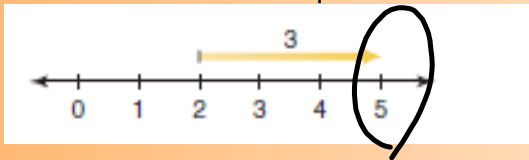


1)  $(+6) + (-3) = +3$

2) What is the addition equation for the number line?



$(+2) + (+3) = +5$

3) Represent the subtraction equation with counters:

$(+5) - (+1) = +6$

$= +6$

4)  $(-4) - (+3) = -7$

5)  $35 \div 7 = 5$

6)  $28 \times 0.5 = 14$

7)  $321 \times 2 = 642$

8) What number is divisible by 4? a) 314 b) 340 c) 221

9) What number is divisible by 6? a) ~~204~~ b) 321 c) 332

10)  $1/3$  of 6 = 2

$2 + 0 + 4 = 6$

Explore

Record on the board how many siblings you have.  
Use the class data.  
Find the mean, the median, and the mode.  
Find the range.

mean - 1.75  
median - 2  
mode - 1  
range - 3

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Reflect & Share

With a classmate, discuss which measure best describes the average number of siblings.

1 ✓	2 ✓	1 ✓	0 ✓
3	3 ✓	3 ✓	
1 ✓	2 ✓	1 ✓	
1 ✓	2 ✓	2 ✓	
1 ✓	2 ✓	3 ✓	

0, 1, 1, 1, 1, 1  
 1, 1, 2, 2, 2, 2,  
 2, 3, 3, 3, 3

- 6. Assessment Focus** A Grade 7 class wanted to find out if a TV advertisement was true. The ad claimed that *Full of Raisins* cereal guaranteed an average of 23 raisins per cup of cereal. Each pair of students tested one box of cereal. Each box contained 20 cups of cereal. The number of raisins in each cup was counted.



- a) Assume the advertisement is true.  
How many raisins should there be in 1 box of cereal?
- b) Here are the results for the numbers of raisins in 15 boxes of cereal:  
473, 485, 441, 437, 489, 471, 400, 453, 465, 413, 499, 428, 419, 477, 467
- Calculate the mean, median, and mode numbers of raisins.
  - Identify the outliers. Explain your choice.
  - Calculate the mean, median, and mode without the outliers.  
How do the outliers affect the mean?
  - Should the outliers be used when reporting the average number of raisins? Explain.
  - Was the advertisement true? Justify your answer.

A clothing store sold jeans in these sizes in one day:

28 30 28 26 30 32 28 32 26 28 34 38 36 30 34 32 30

Find all 3 averages

mean  
median  
mode



In this situation, the mean, 30.7, is of little use.  
The mean does not represent a size.

The median, 30, shows about one-half of the customers bought jeans of size 30 or smaller, and about one-half of the customers bought jeans of size 30 or larger.

The modes, 28 and 30, tell which sizes are purchased more often.  
The mode is most useful to the storeowner.  
He may use the mode to order extra stock of the most popular sizes.



\*you want outliers

The mean is usually the best average when no numbers in the data set are significantly different from the other numbers.

The median is usually the best average when there are numbers in the data set that are significantly different.

The mode is usually the best average when the data represent measures, such as shoe sizes or clothing sizes.

A store needs to restock the sizes that sell most often.

no outliers

**Practice**

1. The daily high temperatures for one week at Clearwater Harbour were: 27°C, 31°C, 23°C, 25°C, 28°C, 23°C, 28°C
  - a) Find the mean, median, and mode for these data.
  - b) Which average do you think best describes the daily high temperature at Clearwater Harbour that week? Explain.
  - c) The weather channel reported the average temperature for Clearwater Harbour that week was 23°C. Is this correct? Explain.



2. Caitlin received these test marks in each subject.
  - a) Find the mean, median, and mode mark for each subject.
  - b) Explain what information each average gives.
  - c) Which subject do you think Caitlin is best at? Worst at? Explain your reasoning.

Caitlin's marks							
Math	85	69	92	55	68	75	78
Music	72	81	50	69	81	96	92
French	68	74	82	80	76	67	74

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Derek

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g. 1, 2, 5, 6, 8

5. Is each conclusion correct? Explain your reasoning.
- a) The mean cost of a medium pizza is \$10.  
So, the prices of three medium pizzas could be \$9, \$10, and \$11.
  - b) The number of raisins in each of 30 cookies was counted.  
The mean number of raisins was 15.  
So, in 10 cookies, there would be a total of 150 raisins.
6. **Assessment Focus** In each case, which average do you think is most useful: the mean, median, or mode? Justify your answer.
- a) A storeowner wants to know which sweater sizes she should order.  
Last week she sold 5 small, 15 medium, 6 large, and 2 X-large sweaters.
  - b) Five of Robbie's friends said their weekly allowances are:  
\$10, \$13, \$15, \$11, and \$10.  
Robbie wants to convince his parents to increase his allowance.
  - c) Tina wants to know if her math mark was in the top half or bottom half of the class.

**8. Take It Further** Andrew has these marks:

English 82%, French 75%, Art 78%, Science 80%

a) What mark will Andrew need in math if he wants his mean mark in these 5 subjects to be each percent?

i) 80%

ii) 81%

iii) 82%

b) Is it possible for Andrew to get a mean mark of 84% or higher?

Justify your answer.



9. **Take It Further** Celia received a mean mark of 80% in her first three exams. She then had 94% on her next exam. Celia stated that her overall mean mark was 87% because the mean of 80 and 94 is 87. Is Celia's reasoning correct? Explain.

