IM 9–12 MATH v.1

Unit 1
Sequences and Functions

ALGEBRA 1

Lesson 7

Spreadsheet Computations

Illustrative Mathematics®

Kendall Hunt

Learning Goal

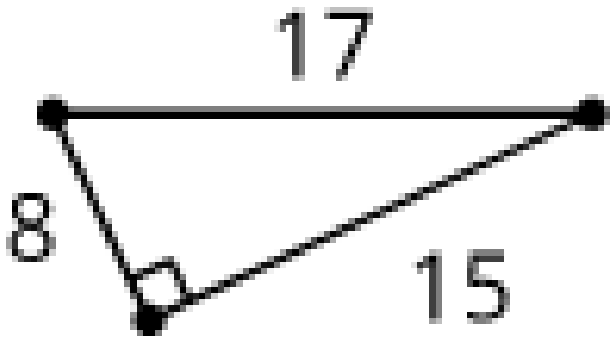
Let's use spreadsheets as calculators.

Algebra 1

Dust Off Those Cobwebs

Warm-up

1. A person walks 4 miles per hour for 2.5 hours. How far do they walk?
2. A rectangle has an area of 24 square centimeters. What could be its length and width?
3. What is the area of this triangle?



A Spreadsheet Is a Calculator

Symbols to use for operations and where to find them:

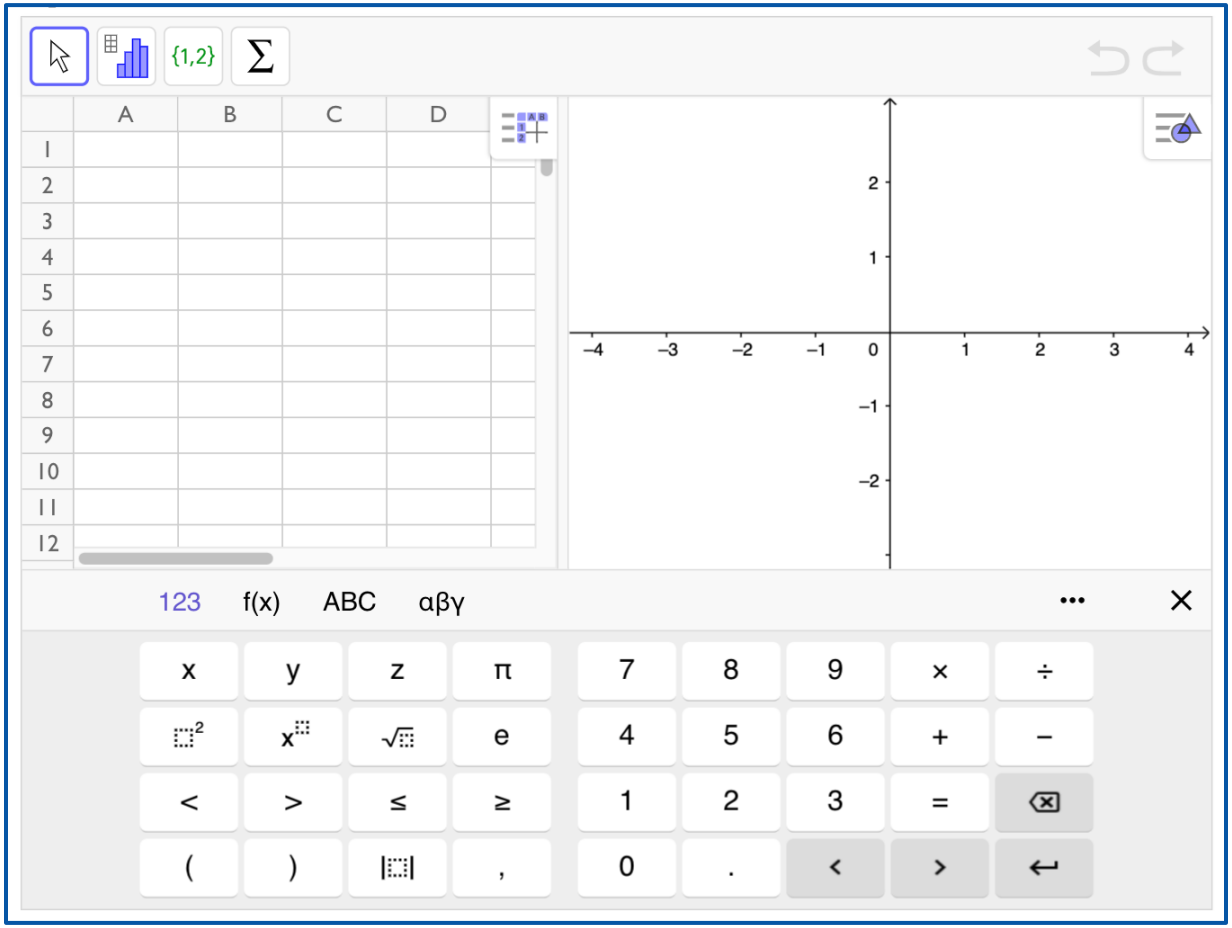
- + for add
- - for subtract or for a negative number (this symbol does double duty in most spreadsheets)
- * for multiply
- / for divide or for a fraction
- ^ for exponent
- . for a decimal point
- ( ) to tell it what to compute first. (often needed around fractions)

A Spreadsheet Is a Calculator

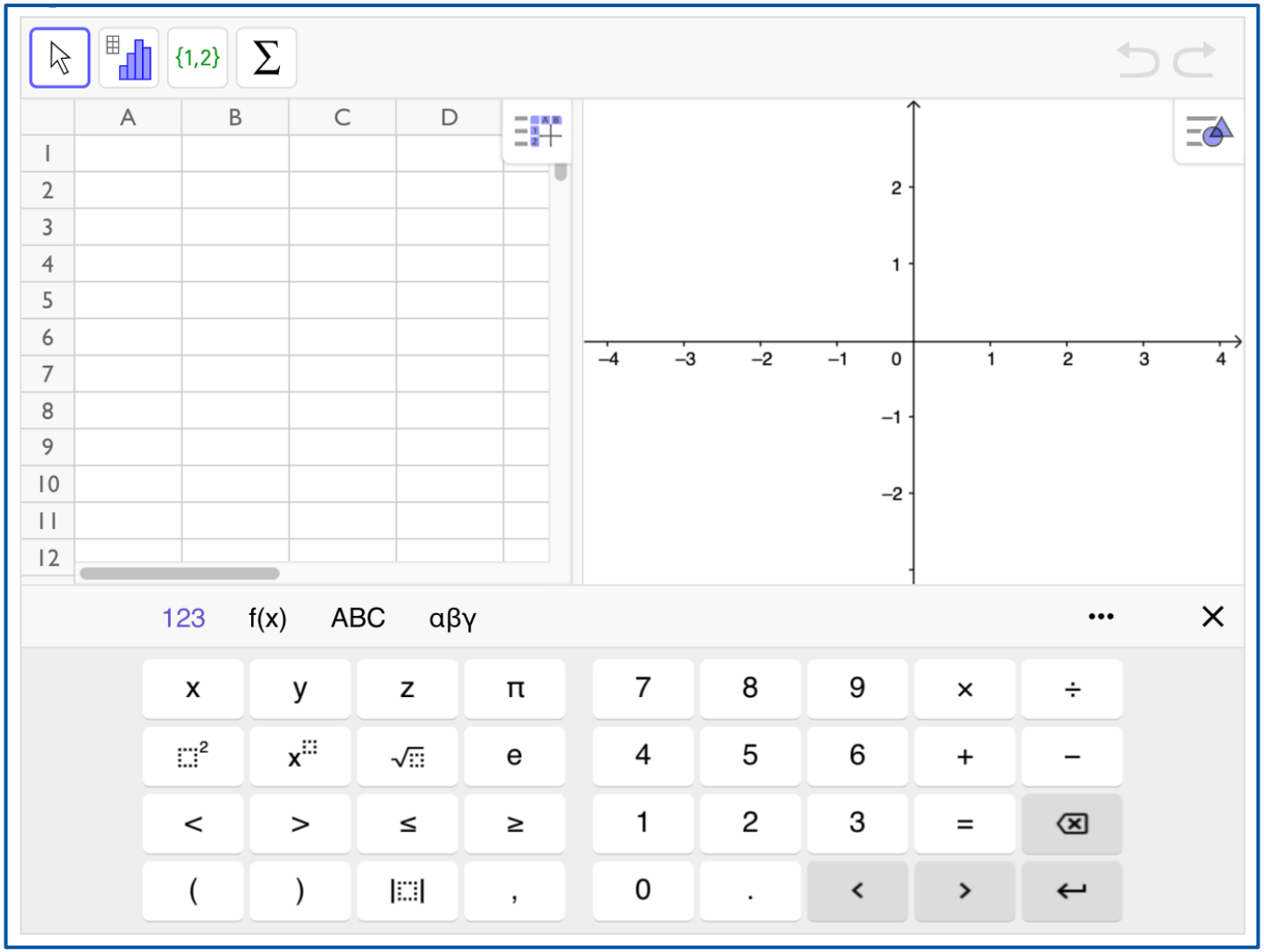
Use a spreadsheet to compute each of the following. Type each computation in a new cell, instead of erasing a previous computation.

- $2 + 7$
- $2 - 7$
- $7 \cdot 2$
- 7^2
- $7 \div 2$
- $\frac{1}{7}$ of 91
- $0.1 \cdot 2 + 3$
- $0.1(2 + 3)$
- $\frac{1}{7}$
- $13 \div$
- The average of 2, 7, 8, and 11

A Spreadsheet Is a Calculator



Use the Contents of a Cell in a Calculation



Use the Contents of a Cell in a Calculation

1. Type any number in cell A1, and another number in cell A2. Then in cell A3, type =A1+A2. What happens?
2. In cell A4, compute the product of the numbers in A1 and A2.
3. In cell A5, compute the number in A1 raised to the power of the number in A2.
4. Now, type a new number in cell A1. What happens?
5. Type a new number in cell A2. What happens?
6. Use nearby cells to label the contents of each cell. For example in cell B3, type "the sum of A1 and A2." (This is a good habit to get into. It will remind you and anyone else using the spreadsheet what each cell means.)

Solve Some Problem

For each problem:

- Estimate the answer before calculating anything.
- Use the spreadsheet to calculate the answer.
- Write down the answer and the formula you used in the spreadsheet to calculate it.

1. The speed limit on a highway is 110 kilometers per hour. How much time does it take a car to travel 132 kilometers at this speed?
2. In a right triangle, the lengths of the sides that make a right angle are 98.7 cm and 24.6 cm. What is the area of the triangle?

Solve Some Problem

3. A recipe for fruit punch uses 2 cups of seltzer water, $\frac{1}{4}$ cup of pineapple juice, and $\frac{2}{3}$ cup of cranberry juice. How many cups of fruit punch are in 5 batches of this recipe?

4. Check in with a partner and resolve any discrepancies with your answer to the last question. Next, type 2, $\frac{1}{4}$, $\frac{2}{3}$, and 5 in separate cells. (You may find it helpful to label cells next to them with the meaning of each number.) In a blank cell, type a formula for the total amount of fruit punch that uses the values in the other four cells. Now you should be able to easily figure out:

   a. How much in 7.25 batches?

   b. How much in 5 batches if you change the recipe to 1.5 cups of seltzer water per batch?

   c. Change the ratio of the ingredients in the fruit punch so that you would like the flavor. How many total cups are in batch?

I can use a spreadsheet as a calculator to find solutions to word problems.

Learning Targets

Algebra 1

Good Old Raisins and Peanuts

Cool-down

Diego's family is going on a camping trip and his job is to make a batch of GORP (Good Old Raisins and Peanuts) to take on the trip. In his kitchen, he finds a bunch of identical boxes of raisins and a bunch of identical bags of peanuts. He puts all of this information in a spreadsheet:

	A	B	C	D
1	ounces of raisins in each box	3.5		
2	number of boxes	12		
3	ounces of peanuts in each bag	4		
4	number of bags	18		
5				
6				
7				

1. Explain how Diego could use the spreadsheet to figure out how many total ounces of GORP he can make.
2. Diego decides that he doesn't need that much GORP. Explain how he could use the spreadsheet to figure out how many boxes of raisins and how many bags of peanuts he needs to make around 60 ounces of GORP.