



## 7<sup>TH</sup> GRADE TI-73 ACTIVITY 22: MAGIC FRACTIONS

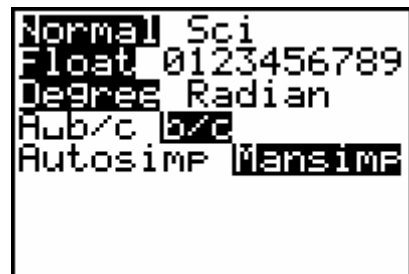
### ACTIVITY OVERVIEW:

In this activity we will

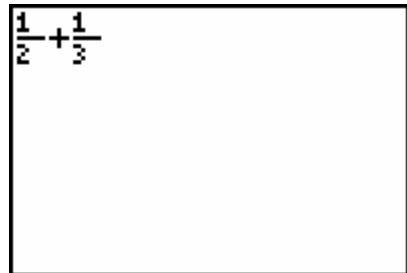
- Discover the magic qualities of adding unit fractions

First of all, unit fractions are fractions whose numerator is 1.  $1/2$ ,  $1/3$ ,  $1/6$ ,  $1/5$ ,  $1/9$  are all unit fractions.

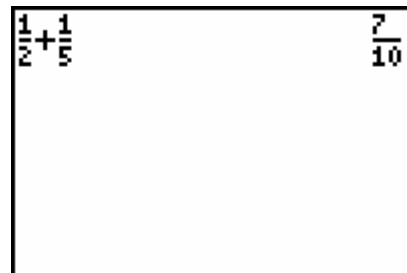
First, we need to set up the calculator so that it doesn't automatically give us simplified answers or mixed numbers. Press the **MODE** key and set up your screen like the one on the right by arrowing to the highlighted setting and pressing **ENTER**



Try this problem on your calculator. Add  $1/2$  and  $1/3$ . To enter a fraction, type the numerator and then press the **b/c** key. Enter the denominator and then press the **▸** key. Your screen should look like the one at the right before you press **ENTER** to do the addition.



Press **ENTER** to get the answer. Record this entire problem in your notebook. Try this problem.  $1/2 + 1/5$ . Do you notice anything about



Do all of these problems and record the answers on the right.

$$1/8 + 1/3 = \underline{\hspace{2cm}}$$

$$1/2 + 1/7 = \underline{\hspace{2cm}}$$

$$1/4 + 1/9 = \underline{\hspace{2cm}}$$

$$1/3 + 1/7 = \underline{\hspace{2cm}}$$

$$1/10 + 1/11 = \underline{\hspace{2cm}}$$

Look at the numerator in the answer and the denominators in the problem. Look at the denominator in the answer and the denominator in the problem. Do you see a pattern?

In the problem  $1/8 + 1/3$ , the answer is  $11/24$ . Notice that the answer in the numerator is 11 and the two denominators 8 and 3, add to 11. The denominator in the answer is 24 and the denominators in the problem, 8 and 3, multiply to 24.

Now you have a quick method to find answers for fraction problems with nit fractions.

**Extension**

The calculator does not use this method for all problems. Try  $1/2 + 1/6$ . What is the answer? Why is the denominator not 12? Why is the numerator 4 and not 8? What is different about this problem?

$$\begin{array}{r} \frac{1}{2} + \frac{1}{6} \\ \hline \frac{2}{3} \end{array}$$

Can you come up with a method to subtract unit fractions?