



# TI-73 EXPLORER™

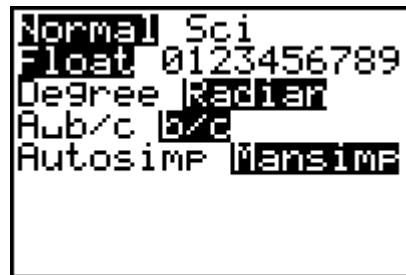
## 7<sup>TH</sup> GRADE ACTIVITY 2: PRIMING THE NUMBERS

### ACTIVITY OVERVIEW:

In this activity we will

- Use the fraction function to find the prime factors of a number using the SIMP key automatically and by investigation

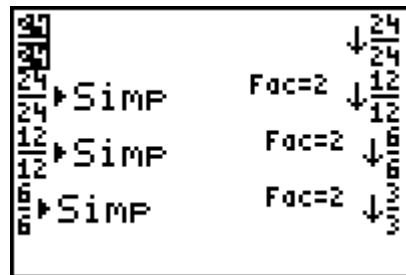
First, set your calculator so that it looks like the screen at the right. These settings will output your fractions as only fractions and will not simplify the fractions automatically. Press  $\beta$  and your arrow keys to move to the settings and press  $\beta$  to select them



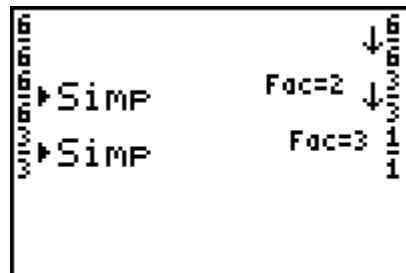
Enter a number as the numerator and denominator of a fraction. Enter the number, press the = key and enter the number again. Then press the  $\beta$  key. You should see a screen similar to what is on the right.



In order to find the prime factors of a number, press the B key and press  $\beta$ . Each time you do this, the calculator will find the next smallest prime factor. Again, you can see what the screen should look like on the right.



You will know that you have found ALL of the prime factors of a number when your fraction results in 1/1 and the arrow key next to your answer disappears. The down arrow next to the output tells you that you have not found all of the prime factors of the original number.



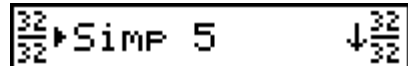
In order to test your answers, multiply together ALL of the prime factors of a number you have found. What number should you get as an answer?

You can also find prime factors by entering them yourself. Enter 36 as your numerator and denominator and then, press B and enter a prime number you believe is a factor. Then press  $\beta$ .



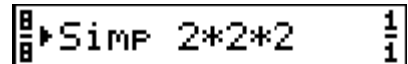
A calculator display showing the fraction  $\frac{36}{36}$  on the left, the text "SIMP 2" in the middle, and the fraction  $\frac{18}{18}$  on the right. A right-pointing arrow is between the fraction and "SIMP 2", and a downward-pointing arrow is between "SIMP 2" and the second fraction.

If your prime "guess" is included in the number, it will reduce the number by that factor. If it is not a factor, the fraction will not change.



A calculator display showing the fraction  $\frac{32}{32}$  on the left, the text "SIMP 5" in the middle, and the fraction  $\frac{32}{32}$  on the right. A right-pointing arrow is between the fraction and "SIMP 5", and a downward-pointing arrow is between "SIMP 5" and the second fraction.

Once you have practiced this, take turns with a partner to find the complete factorization of a number by entering all of the factors as simplifiers. You will get 1/1 if your guess is complete and the arrow will disappear.



A calculator display showing the fraction  $\frac{8}{8}$  on the left, the text "SIMP 2\*2\*2" in the middle, and the fraction  $\frac{1}{1}$  on the right. A right-pointing arrow is between the fraction and "SIMP 2\*2\*2".