

**Find the Fraction!**

Twice a fraction plus half of the fraction,

all ***times*** that fraction, equals that very same fraction!

What is the fraction?

Remember to:

* PERSEVERE!
* Be PRECISE in your work!
* VERIFY your answer!
* Be prepared to share your work with your classmates.
* Be prepared to critique the work of others.

**For the teacher**

First, we recognize that x = 0 is a possible solution.

Now, let’s look for a nonzero solution.

One possible approach:

Let ***x*** represent “the fraction.”

* “twice a fraction” would be represented by: 2**x**
* “half of the fraction” would be
* Thus, the top line would translate to: 2**x +**
* THEN, “all times that fraction” means that the quantity (2**x +**  would be multiplied by ***x,*** thus resulting in the expression: (2**x +**  ***x***
* Finally, “equals that very same fraction” means that the previous expression must equal ***x*** . Therefore, the following equation results: (2**x +**  ***x*** = ***x***

**Now:**

1) Begin by dividing both sides by ***x***. This will result in 2**x +**  = 1

2) Then multiply both sides of the equation by 2, resulting in 4**x** + **x** = 2

3) Combine like terms: 5***x*** = 2

4) And divide both sides by 5: ***x*** =

So… “the fraction” is