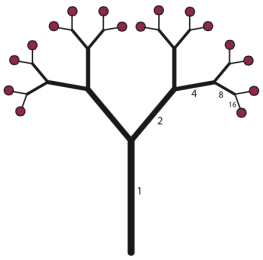


Name: _____

Fraction Tree

1. Write one sentence that describes what a fractal is.

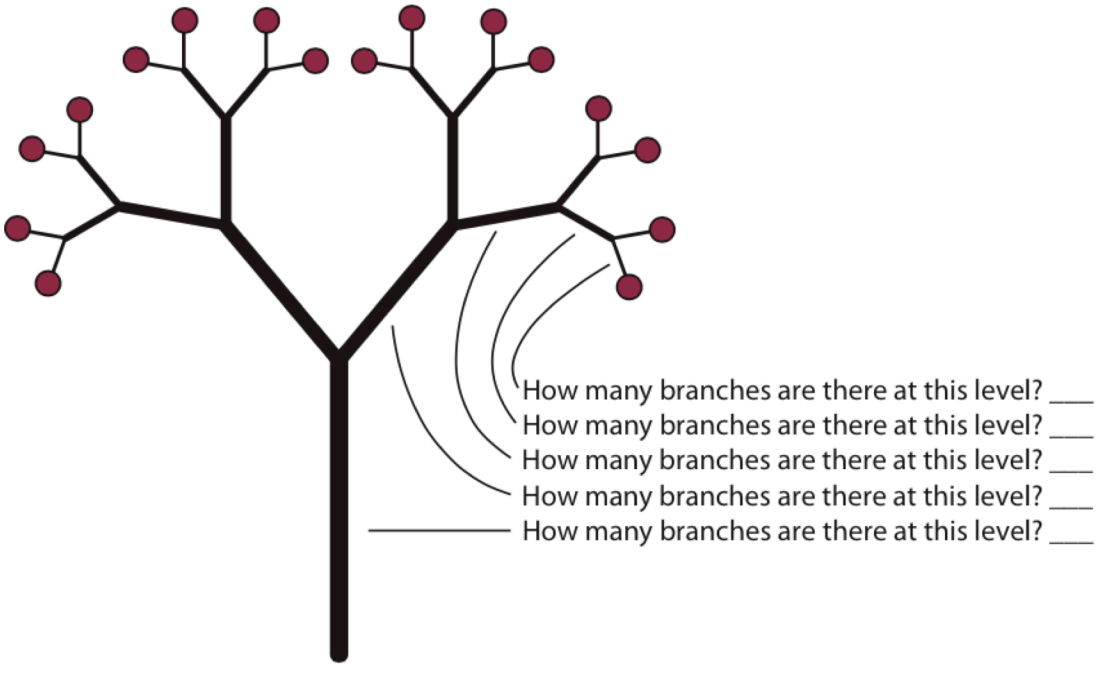
2. What are four types of fractal patterns that you learned about?

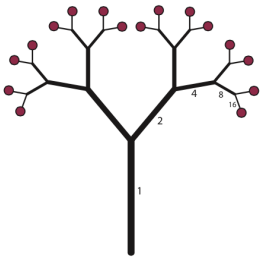
a) b) c) d)

3. Draw an example of three types of fractal patterns.

a) b) c)

4. Fill in the blanks below, answering the question, "How many branches are there at this level?"

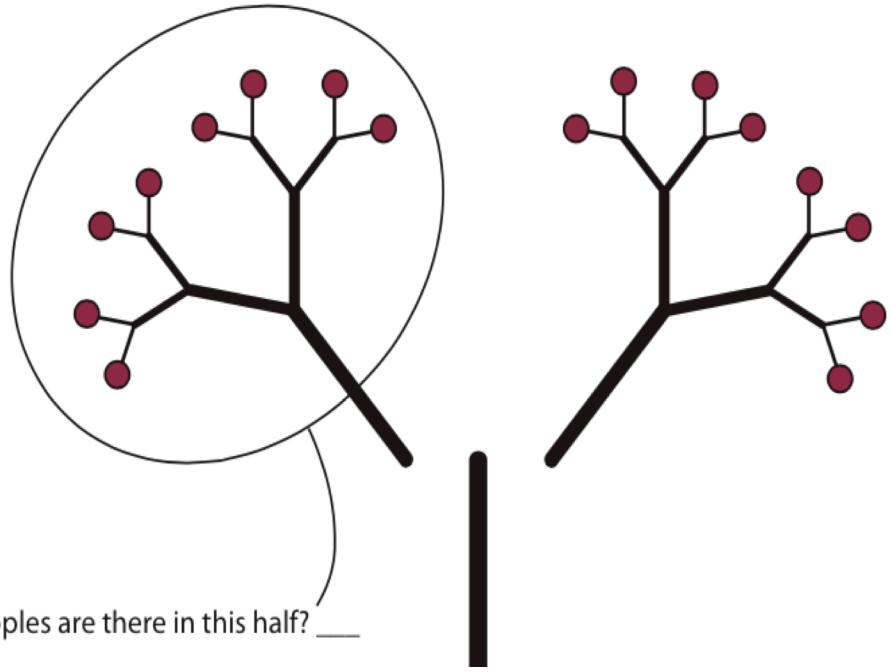




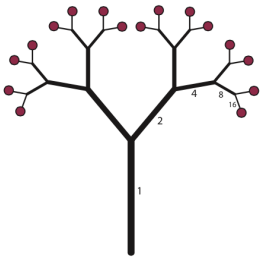
Name: _____

Fraction Tree

Next, we'll take the Fraction Tree apart:



5. How many apples are there in this half? ___

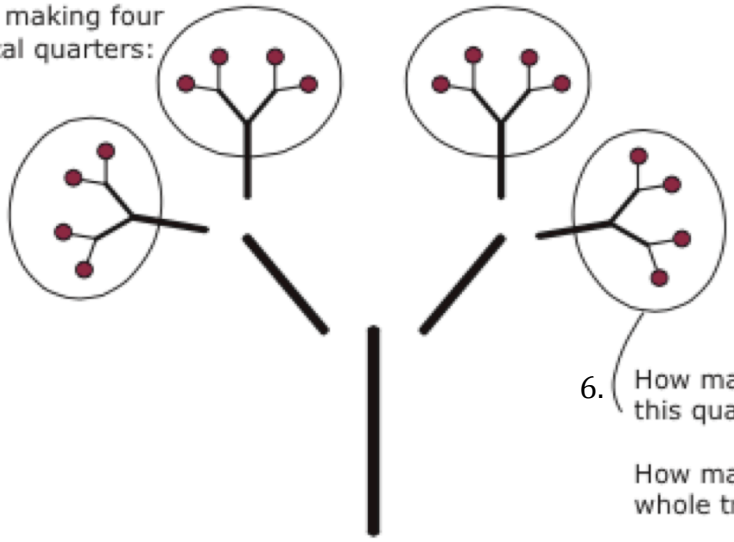


Name: _____

Fraction Tree

Next, we'll break each half in half again, making four identical quarters:

Half of one Half is one Quarter!



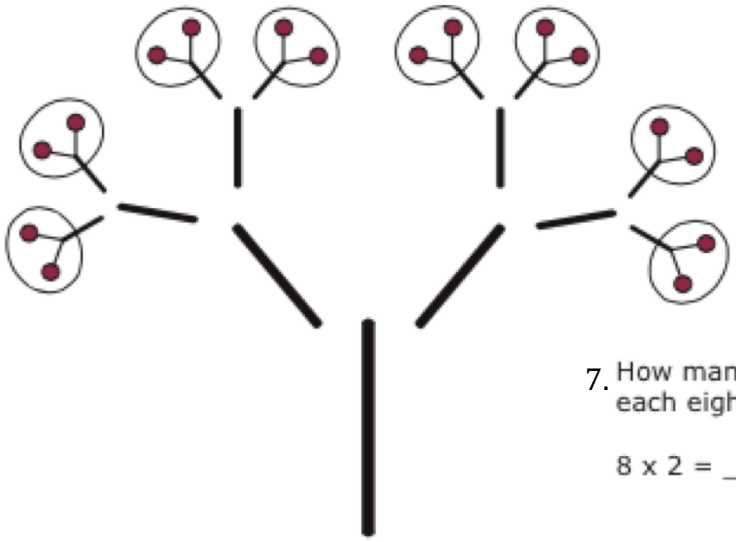
6. How many apples are there in this quarter? ___

How many apples are on the whole tree? ___

4 x 4 = ___

Let's keep breaking the pieces in half. Now we have eight identical pieces:

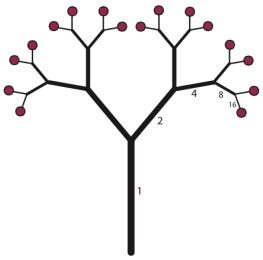
Half of one Quarter is one Eighth!



7. How many apples are there in each eighth? ___

8 x 2 = ___

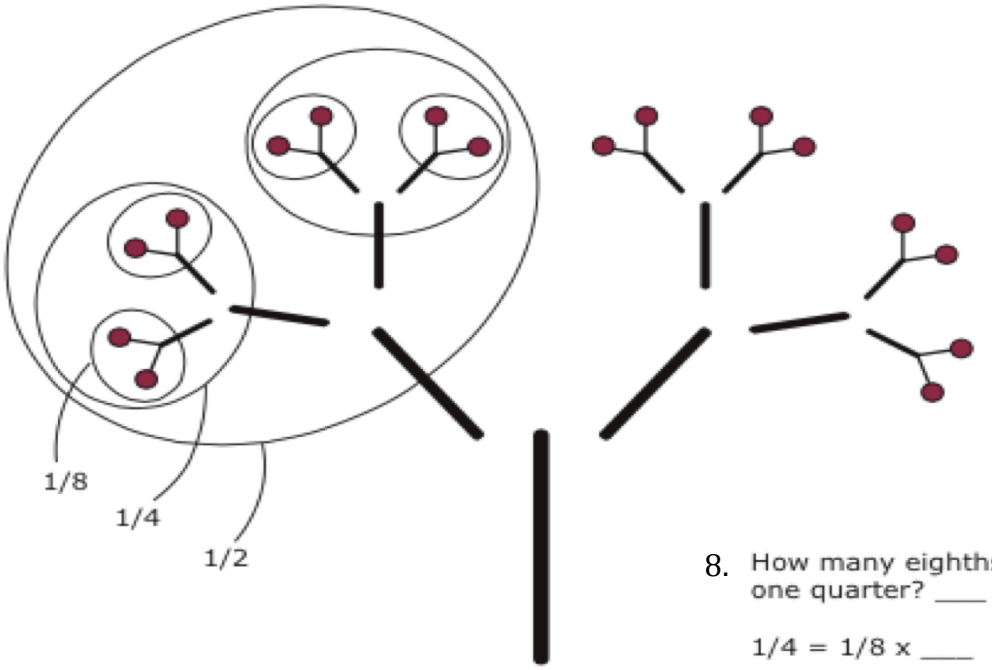
Half of one Eighth is one Sixteenth!



Name: _____

Fraction Tree

The ovals on the left half of the tree show that one half (1/2) is made up of two quarters (2/4), and it's also made up of four eights (4/8).



8. How many eighths are there in one quarter? ____

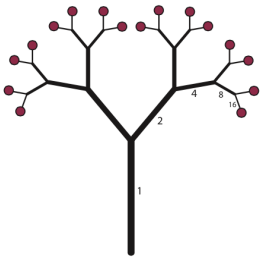
   1/4 = 1/8 x ____

   How many quarters are there in one half? ____

   1/2 = 1/4 x ____

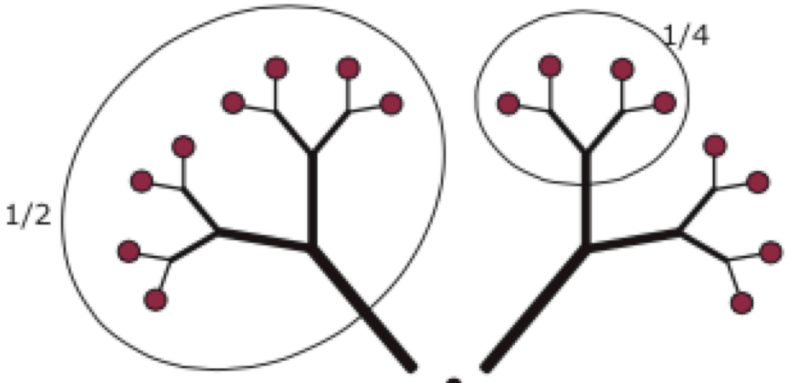
   How many eights are there in one half? ____

   1/2 = 1/8 x ____



Name: _____

Fraction Tree

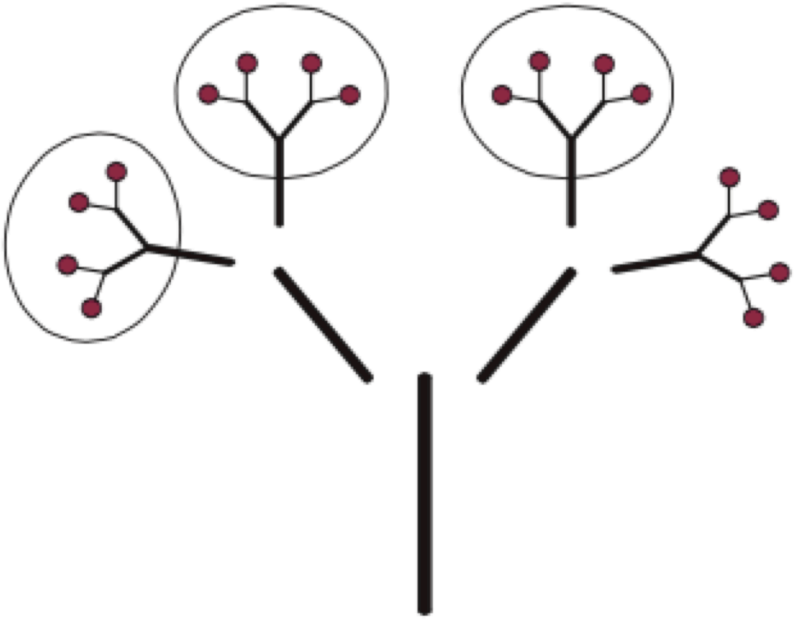


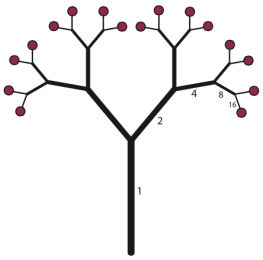
In this tree, the two ovals show 1/2 of the tree and 1/4 of the tree.

In order to add the 1/2 + 1/4, we must remember that the half on the left is really made up of 2 quarters.

This means that 1/2 + 1/4 really equals 2/4 + 1/4

In the tree below, you can see that the answer is 3/4

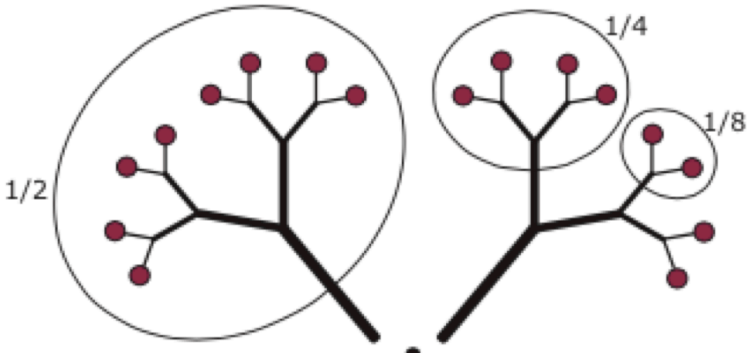




Name: _____

Fraction Tree

9. Next we'll explore how to add halves and quarters and eighths together. How much is 1/2 + 1/4 + 1/8?



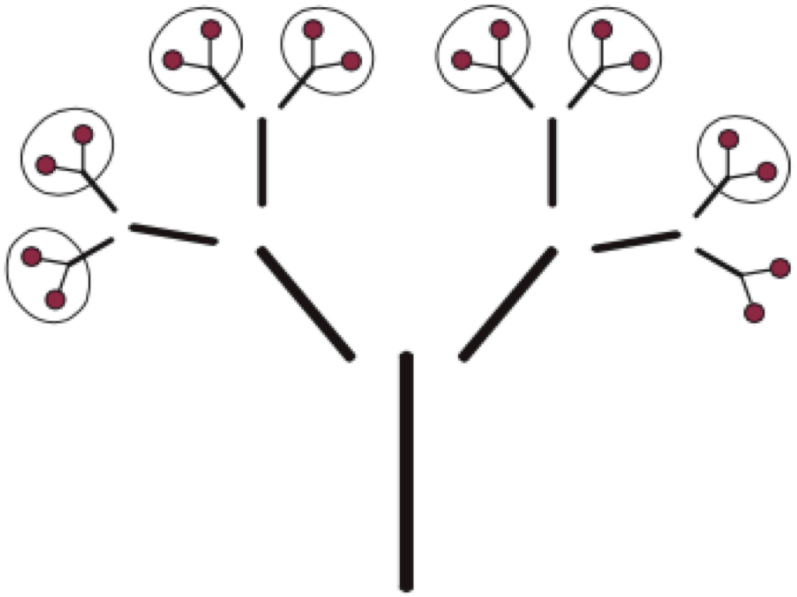
In this tree, we've circled a half, a quarter and an eighth of the tree.

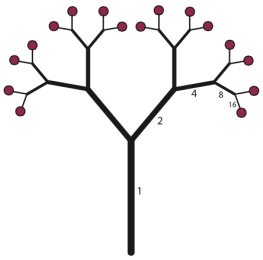
To add them up, we have to remember that 1 quarter equals 2 eighths, and that 1 half equals 4 eights. In other words,
1/2 = 4/8 and 1/4 = 2/8

In the bottom tree, we've circled all the eights that make up the half and the quarter.

1/2 + 1/4 + 1/8 = 4/8 + 2/8 + 1/8

Now that everything is written in eights, we can add up the fractions easily, and in the tree below you can see that the answer is 7 eighths, or 7/8





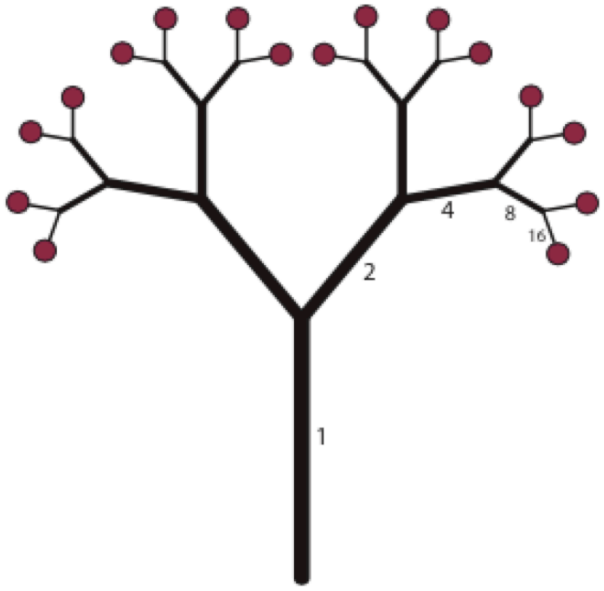
Name: _____

Fraction Tree

Finally, let's get back to counting apples.

10. How many apples are there in half the tree?

1/2 = _____ /16 = _____ /8



11. How many apples are there in one quarter of the tree?

1/4 = _____ /16 = _____ /8

12. How many apples are there in one eighth of the tree?

1/8 = _____ /16

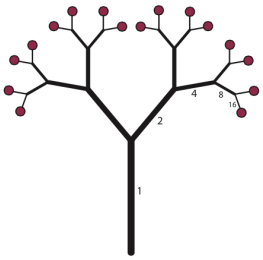
13. How many apples are there in 1/4 + 1/8 of the tree?

1/4 + 1/8 = _____ /8 + 1/8 = _____ /8

14. What fraction of the tree includes four apples? 4/ _____ = _____ /8 = _____ /4

15. What fraction of the tree includes 12 apples? 12/_____ = _____ /8 = _____ /4

16. What fraction of the tree includes 10 apples? 10/ _____ = _____ /8



Name: _____

Fraction Tree

17. Fill in the following blanks:

1/8 + 1/8 = _____ /8 = _____ /4

1/4 + 1/4 = _____ /4 = _____ /2

1/2 + 1/2 = _____ /2 = what whole number? _____ = _____ /8 = _____ /4 = _____ /2

10. Now, work on:

1/2 + 1/4 = _____ /4 + 1/4 = _____

1/2 + 1/8 = _____ /8 + 1/8 = _____

3/8 + 1/4 = 3/8 + _____ /8 = _____

11. On the number line below, mark where 1/2 is. Also, mark 1/4, 1/8, 3/8, 3/4, 5/16 and 10/16.